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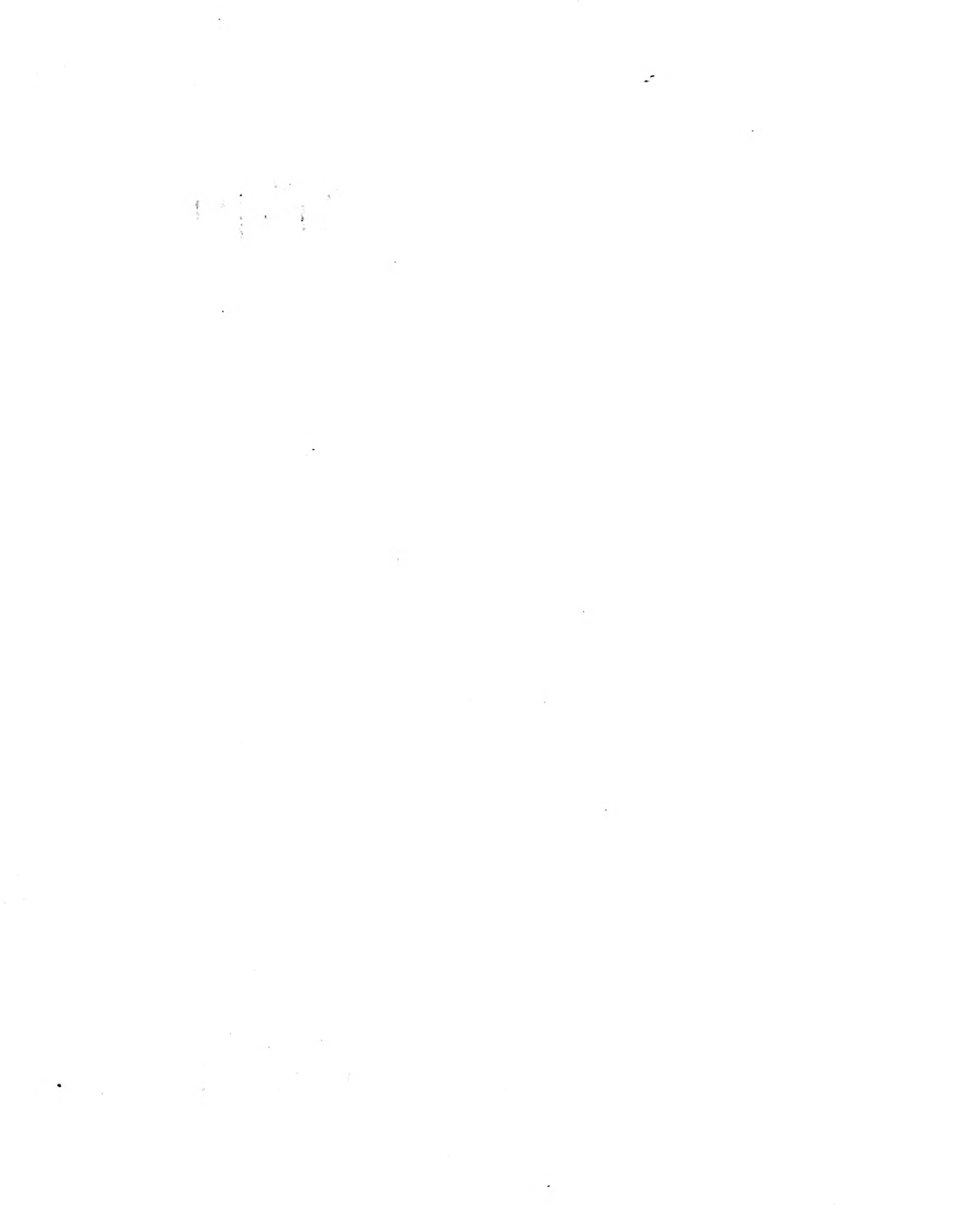
TIMBERLINE
MINES CO.

A
GROUND-FLOOR
OPPORTUNITY

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A GROUND FLOOR OPPORTUNITY
THE
**TIMBERLINE
MINES
CO**

One of the
BIG 5 FIVE

To open the Timberline --- this has ever been the ultimate aim and object of the Big Five, the highest perfection of its plans.



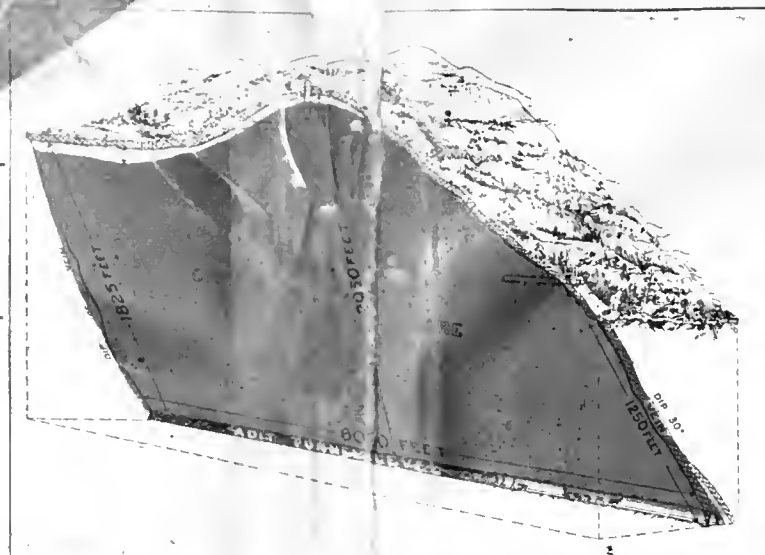
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Wedge



of... ..Gold

THE TIMBERLINE.--A Section Cut from the Mountain Above the Level of the Adit Tunnel.

The block of ground shown here is 6,000 feet long and 1,850 feet deep at the apex of the mountain. The dip of the vein, as determined by survey, is thirty degrees from a perpendicular, making the maximum depth of vein above the tunnel level 2,050 feet. The average depth of the block is about 1,500 feet, or 1,650 feet measured on the dip of the vein. The vein out-crops at the surface nearly the entire 6,000 feet, and is three to eight feet wide.

HERE is not merely "a wedge," but acres of gold. This is no figure of speech. Were that portion of the vein which lies within the Timberline block laid out flat on the surface, it would present an area 6,000 feet long and 1,650 wide—225 acres. Nor would this be simply 225 surface acres. It would be a body of mineral 225 acres in area, three to eight feet thick. Figures can hardly reach nor the imagination grasp the fabulous possibilities of wealth lying within such a mass. Of course, it is not claimed, neither is it at all possible that within the area there is not barren ground. That there are whole stretches wherein little or no values exist, is almost certain. All experiences in mining point that way. Yet after making

all necessary allowance for pinches, faults and barren regions, there lies right here in this block enough gold to inspire the highest confidence, and justify the money and effort which the Big Five will employ in opening this ground, that its gold may pour forth in a never-ending stream for half a century.

To open this ground, has been our leading purpose for several years, and to this end all our plans have been shaped. To carry out the great project, the time is now ripe. We are in every way amply prepared, and a wide interest in the work has already been awakened.

That there are "acres of gold" here, many are convinced, as the following estimates of

Gold in the Timberline will Show:

Mr. C. W. Perkins of Cedar Rapids, on Jan. 6, wrote us:

The average depth is 1,700 feet; width 5 feet; length 6,000 feet. Number of cubic feet 51,000,000; number of tons 5,100,000. This, at \$10 per ton, less \$2 for expenses or \$8 net, will produce for dividends \$40,800,000. It will require a mill of 600 tons daily capacity 31 years to mill it, running 300 days in each year. Mining and marketing 150,000 tons per year at \$2 net per ton, will produce for dividends \$1,200,000 annually, or 400 per cent. on a capitalization of \$3,000,000.

Here are Dr. F. W. Goodall's figures:

"I take the Adit and Dew Drop levels perpendicular, 300 feet apart, and the 95 feet on the dip, which is 8 1/3 per cent. more than the perpendicular. On this basis, I get 51,747,000 cubic feet or 5,474,700 tons of ore, which will require a mill of 300 tons daily capacity running seventy-five years to reduce it. The prospective net profit on a very conservative basis, is certainly fascinating, to say the least."

From Dr. Stewart of Indiana, comes the following:

"The average depth of the west half, or 3,000 feet, is 1,750 feet perpendicular. Assuming that the gain in depth by the dip of the vein 30 degrees, would bring the east half of 3,000 feet up to the average; and assuming also, that the increase in size with depth will bring the average width up to 8 feet, then we would have 1,750 x 8 x 6,000 = 72,000,000 cubic feet or 7,200,000 tons of ore. If ten per cent. of this be smelting ore, then we would have 720,000 tons smelting ore and of mill dirt 6,480,000 tons. To treat this in ten years of 300 working days each, would require a capacity of 2,160 tons per day. The value of the smelting ore at \$100 per ton is \$72,000,000, and of the concentrating ore at \$20 per ton is \$120,600,000, making a total valuation of \$201,600,000. Deducting \$2 per ton for mining, tramming and milling the ore \$14,400 and also the sum of \$7,200,000 for smelting 720,000 tons of smelting ore or about 925,000 tons of concentrates, or about \$4.37 per ton, would still leave for dividends the handsome sum of \$180,000,000 or \$60 per share on a capitalization of 3,000,000 shares."

It will be noticed that in none of these estimates is there any allowance made for faults, pinches or barren ground. This is a mistake. And, yet, were half the ground barren, it were enough, nor would half a century of mining exhaust the treasure.

These are a few of the replies made in answer to the query: "What is the probable amount of gold in the Timberline?" It is an interesting problem and we would be pleased to hear from others on this question.

"R"

April 1, 1900.

TIMBERLINE,
703 KITTREDGE BUILDING, DENVER, COLO.

THE TIMBERLINE LIBRARY

The Timberline Mines Company is incorporated for \$30,000, divided into 3,000,000 shares. No individual responsibility. As one of the Big Five, it shares in all the advantages of a large combination. It becomes at once a part of an established, going enterprise—one of the largest in the state.

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THIS little book is sent to you to gain, if possible, your attention. Its merits, if any it possesses, are not in its originality or literary value. It makes no pretense in that direction. We will be perfectly frank with you. We want your co-operation—your money—not less for our own betterment than for yours. This is the entire purpose of the book—the *raison detre*

We have formed and are still building a great co-operative gold mining enterprise. If you are now with us, we invite your further co-operation; if you are not, we ask that, as the lawyers say, you take the matter under advisement.

If you know nothing of gold mining, more is the pity. It is the one field still free from competition, that leads to fortune. Take us seriously. Examine what we have here to say. Weigh carefully the chances; and if you do so, we are confident that you will find a way and a reason to join us.

Mention this proposition to your friends and send their subscription with yours. The opening of the Timberline is the culminating effort of the co-operation of the Big Five. We feel sure you will appreciate these pages, not so much for what we say and our manner of saying it, but for the more practical reason that here is an open door through which you may become a co-partner and sharer in one of the largest and richest gold mining propositions that has ever been offered in this or any other state.

Co-operation means the betterment of the whole. Hence, when we say that we want your money not less for our own betterment than for yours, we mean just that. Co-operation can mean nothing else. We cannot advance our interests without advancing yours—we build together, co-workers for dividends and a fortune. To assert that in this work we are seeking your advancement and yours alone, would be to proclaim ourselves philanthropists. This we distinctly are not, nor would you believe it if we made the claim. We are living in an age when the truth that "A man alone is no man," is forced home on us at every turn. "Unite or die" is the shibboleth of the times. Shoulder to shoulder we must work together, and so working under wise direction, there is an assurance that we build toward fortune.

If these pages lead you into into right paths and with hands united, we make a fortune for each other, our mission is accomplished.

N. B. Merrill

The Ground Floor Man.

THE time to make an investment is while the enterprise is shaping itself—not after it has reached its perfected form. It is hard to make men understand this. It is hard to make men understand that this, the formative period of an enterprise, is the ground floor period, where all the big money is made. The mistake men make in gold mining investments is in waiting for a dead sure thing. He who does this, will have to pay dollar for dollar for everything he gets. You can buy gold dollars for one hundred cents, but there is no profit in the investment.

The men who make the big money in every great enterprise are those who come in at the beginning. The history of every great enterprise proves this, and gold mining is no exception. When "Granite Mountain" was first put on the St. Louis market, it sold for 10c. In six months it rose to \$10 a share, and in two years reached \$75. It made for the holders a hundred vast fortunes and paid more than \$13,000,000 in dividends. In 1886, "Union Consolidated" sold for 9c. and within the year rose to \$10. "Crown Point," in 1872, reached \$18.25 a share, and paid in dividends over \$11,000,000, and "Consolidated Virginia" passed in a single year from 11c. to \$65. In Colorado to-day there are hundreds of like instances. Isabella rose in three days from 30c. to \$1.80, and many a man is to-day happy in the fortunes it brought him. Gold Coin was chasing for buyers at 3c. two years ago; to-day it is worth \$2; Portland, Moon-Anchor and a dozen others multiply the instances of fortunes made; but these were made, not by men who went in when the enterprise was completed, when the values were in sight, when there was "a dead sure thing" all around. It was the ground floor man—the man who went in at the beginning that made the money in all these movements—is making the money to-day.

You have no doubt a desire to make money. Every man has. This little book brings you that opportunity. It presents the essential facts of the Timberline Mines Company and its mines. It is a portion of the Big Five combination—a combination that has

already made money for every man that has invested a dollar in it. In this great combination, four mining companies have preceded the Timberline—the Dew Drop, the Adit, the Ni Wot and Columbia. Taken altogether, they, with the Timberline, represent a powerful aggregation of capital, splendidly equipped for extensive and successful gold mining. As a combination, it is still in the formative stage—is still, for the investor, a ground-floor proposition. When first offered, "Dew Drop" was bought for 10c; to-day it is 60c. "Adit" went at 12 1-2c., "Ni Wot" at the same, and to-day they are worth 36c. to 40c. Those who had the good fortune and the courage to buy in at the earlier stages, have made 300 per cent. to 500 per cent. on their investment, and yet the possibilities of these stocks are not exhausted. The enterprise is still in the formative stage—is still a ground-floor proposition. Nor until these stocks reach par, till the actual dividend period is reached, will it be otherwise.

This is your opportunity—to come into the Big Five combination on the ground-floor. The Timberline offers you this opportunity. The period of production is soon to begin. Dividends will follow, and who can say that the story of "Granite Mountain," "Union Consolidated," "Portland," "Isabella," will not be repeated by the Big Five. Already its mines are well opened, well equipped, and in the Dew Drop mine alone, engineers have estimated 250,000 tons of ore already blocked out. The work of opening the Adit, Ni Wot and Columbia is going forward every day, and double the present amount will soon be in sight. To bring such conditions, it has taken four years of patient labor and much money. The work and money of the first four companies have done this. The investor in the Timberline gets the benefit of all this work. It has made the Timberline Mines Company possible—has made it the most desirable investment the Big Five has ever offered, for less money and less uncertainty attend it. Of these conditions, it is now your good fortune to have the advantage. In this feature alone, there is money, but to come in now, while the ground floor is open to you, means fortune.



FRANCHES—HOME OF THE BIG FIVE.

- () } Course of tunnel.
 (1) } Mouth of tunnel.
 (2) } Breast of tunnel—main line.
 (3) } Breast of tunnel—Ni Wor Branch

"The tendency of all business enterprises is now toward concentration. In business, there is no room for sentiment. Men put their money into an enterprise for what it will bring them, and that business method or arrangement which will bring to them the largest and most certain returns is what they demand and will continue to demand. The Big Five is a response to this demand. It unites under a single head, the related parts of gold mining—draining, tunneling, hauling, raising and milling. It takes the separate capital of distinct corporations, and uniting them, turns the entire force to the highest advantage of all. It takes the separate territory of each corporation and unites it in a single body, shutting out encroachments and making it the dominant power of the entire district. It gives the single dollar the working power of two dollars, makes one man and one mind replace a dozen, and finally wins to itself all that power and prestige which ever attends vast enterprise, and gives to each corporation its just share."

"The Big Five is to day a great concentrated force. It controls and owns over 600 acres in the heart of the richest gold mining district in the state. It has 12,000 feet of the great Dew Drop Adit vein and 4,650 feet of the great Ni Wor-Columbia vein. It has already over 12,000 feet, more than two miles, of tunnels, levels and shafts; has over 300,000 tons of ore blocked out and ready for shipment; has the largest concentrating mill ever built in the district; has the largest and best equipped power plant in the state; employs a force of forty men, will have a hundred on the pay-roll before the close of the year, and is now everywhere recognized as one of the foremost gold mining ventures ever undertaken."

One of the Big Five,

The Timberline.

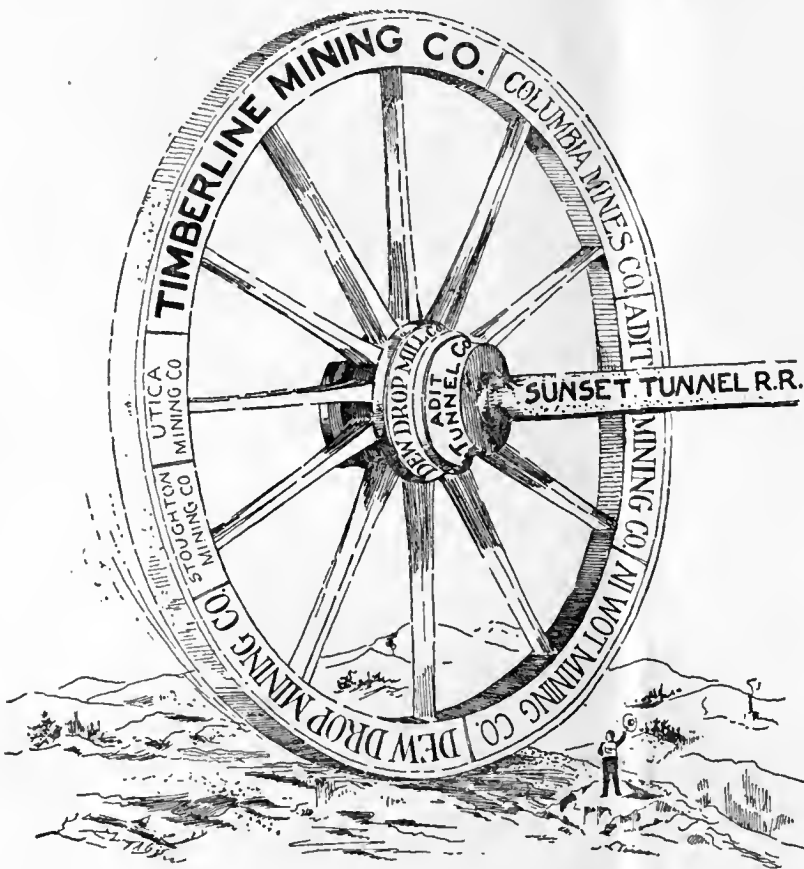


IT IS NECESSARY that a word be said here, touching the relation of the Timberline to the great combination—the Big Five. Briefly, the name “The Big Five” is only a term of convenience and has no corporate existence. Under one management the Dew Drop Mining Company, the Adit Mining Company, the Dew Drop Mill Company, the Adit Tunnel Company, the Sunset Tunnel and Railway Company, the Ni Wot Mining Company, the Columbia Mines Company and the Timberline Mines Company

have certain joint interests, though each is a distinct corporation. The same advantages that have existed and will continue to exist for each of these companies through this combination are now extended to the Timberline.

The best is the cheapest, especially when there is an opportunity to use the best. Eight companies can well afford to have the best general manager, the best superintendent, the best engineer and surveyor, the best assayer and chemist, the best machinists and mill men and the best equipment in every department. A single mining company cannot afford the best of everything. The Big Five cannot afford anything short of the best. The other expenses of office,

telephone service, etc., when divided among the eight companies, is a mere trifle, and these are all necessary to any well conducted mining enterprise. As a practical, economical arrangement, its value is apparent. To graphically present this relation, we have devised this little wheel. A glance at this simple device shows the five mining companies, the Dew Drop, Adit, Ni Wot, Columbia and Timberline, forming a portion of the wheel's rim, while the Adit Tunnel and the Mill companies form an inner wheel, or hub, the whole revolving around a common center, or axis—the Sunset Tunnel and Railway Company. “The Big Five” may, therefore, be understood as composed of two wheels, the one within the other, so related that the movement of one means the movement of all.





THE GREAT DIVIDE—FROM THE TEMPEST SHAFT.

The Timberline== Its History.

I WANT no better evidence of the practical business sense of the men behind this work than that it is a part of the plan to drive a tunnel into the heart of this mountain."

It was Colonel Perry of Indianapolis who said this, standing at the collar of the Tempest shaft which marks the geographical center of the Timberline property. The Colonel is a clear-seeing business man, at that time a stranger to the work and the region. At his feet, scattered widely over the surface, lay the massed evidence of mineral wealth. The outcrop of an ore vein was here, unmistakable in strength, stretching up from the lower country, cutting boldly across the shoulder of the mountain on which we stood, thence on across the bottoms, breaking finally against the mighty wall of the Continental divide that rises to the west. From beyond the point to the east, far below, where the up-curling smoke and the massed buildings mark the entrance to the Adit tunnel, in the clear sunlight of that day, the course of the great vein was evident—a highway of wealth, broad and unmistakable. The collar of the Tempest shaft, near which we stood, marks the apex of the hill, 2,000 feet above the level of that tunnel, and distant from its mouth 3,000 feet, nearly two miles. Connect that shaft and tunnel level, cut that mighty vein on two sides to such a depth, and thence would flow the fabled gold of Ormus or of Ind of which the poet sings.

To such reflection the inspiration lay about us. Not the inspiration that touches the artist soul—though something there may be in that—but the inspiration of material wealth that these hills never fail to give him who hath the eye to see. To the man of clear vision, nowhere in all these hills lies there a nobler or more inspiring prospect. You are standing on a vein of gold-bearing ore that stretches down the mountain two miles before you. Two thousand feet below, clear and peaceful in the sunlight, lie Ward and Frances—the one famous in the early annals of the state for the gold it gave the world, the other the recent birth of co-operative gold mining. Beyond are the plains, spread-

ing before you like a carpet of the gods, made fair and fertile by the water of these hills. Cities are there, like jewels set, made rich and beautiful by the gold these hills have given. Railroads are there, linking city, plain and mountain with their bands of steel, made possible by the wealth these hills are pouring forth in never-ending streams. Even farther stretches the vision to Kansas, and beyond, even to the shore line of the Atlantic, where luxury, power and privilege have waxed mighty on the gold of these hills. Close in between you and the plains, lie the green-robed hills, a tumbled wilderness of beauty—a picture the Master Hand has painted for his children, and swung it high against the soft blue background of Colorado's sky.

And these hills, these nearer ones, what a story is there!



AT THE TEMPEST SHAFT.

Not one of them that does not bear the mark of human effort, not one of them where rotting shaft and crumbling cabin does not tell something of the mingled comedy and

tragedy of human life—the hope, despair, the joy, sorrow, success, failure and death—the whole complex struggle that ever attend the foot of human progress. There is in such a picture the inevitable touch of pathos, for the mind does



TIMBERLINE ORE AT THE DIANA.

not readily distinguish—sees but one side of the picture. Tabor, who died penniless, was a pathetic picture. Men forgot the millions he gave to the world. Tombstone, Arizona, is a pathetic picture of desolation to-day. More than \$200,000,000 came from that ground to enrich the world. So these hills we are looking at, but a single side of the picture presents itself. Millions have gone out from here to enrich the world; other millions are going out to-day, and buried in their depths are still other countless millions awaiting the magic touch of nineteenth century progress to set them free. The measure of the future is the past. But what these hills have done is but an intimation of what they will yet do. It is an intimation that carries with it an inspiration. It says to the clear-seeing man of to-day: "Couple a broader experience, a higher skill and an equal courage to the lines these earlier men have marked out for you, and no man can properly measure the wealth that awaits you here." There are men who know and realize this—few, but they are the chosen ones, the epoch-makers of the commercial world. And standing at the collar of the Old Tempest shaft, as we stood there that day, that man were blind indeed who fails to note the possibilities of wealth the situation offers.

Forty years ago here was an unbroken wilderness. The pick of the prospector nor the axe of the woodman had not touched the solitude. Silent, impassive, the snow capped Arapahoes looked down upon the scene for ages, nor gave a hint of the treasure that lay buried at their feet. Still, silent and

watchful they stand—these mighty guardsmen—but their secret is no longer kept. These forty years have wrought a mighty change in that wilderness. Where the simple savage with bow and arrow and spear hunted wild game, the white man's pick seeks gold. Where the smoke of the primitive camp fire curled up through the trees, the smoke of mill and mine and busy settlement rises. The winding trails that knew only the press of Indian feet are now the highways of commerce—railroads are here, and their wheels blend in musical discord with the pound of stamps and the heavy rumble of the drills.

Among those who first entered the region—with Deardorff, who opened the Columbia, and Davidson, whose venturesome spirit first revealed the treasures of the Ni Wot—was a man named Higginbotham. He is an old man now, if still living, and in his time was as strong and venturesome a spirit as ever entered these hills. The really strong men are few in any number, but these, like Deardorff and Davidson, never fail to leave an impression of themselves. These are the unconscious makers of history, and had this man done nothing more than to link his name with the great vein of gold-bearing ore that cuts its way so boldly from California gulch up across the shoulder of Bald mountain, he had done enough. The shaft that marks the apex of the mountain, spoken of here as the Tempest shaft, has long been better known as the Higginbotham shaft. Beginning at a point where now a cluster of buildings marks the entrance to the Dew Drop mine, this man, in the early '60's, traced this ore through a waste of wood and slide to its biggest and richest outcrop, and there, in a region of perpetual wind and almost perpetual snow, sank his shaft and packed his gold on mule-backs down the mountains. Rich it must have been, rich it certainly was, for the chronicles say that out of the shallow shaft, under conditions that we of this day can little understand,



ON THE TOP OF BALDMOUNTAIN.

Higginbotham made his stake. Was it a million? Hardly. Was it but a few thousands? May be. We do not know. He was a patient, silent man, this Higginbotham, and the

secret of that old shaft is his. And the old shaft, like the old man, still keeps the secret. To this point thousands have gone in the years that have since passed; hundreds of those whom the Big Five people have asked into the hills have climbed the long trail that twists its way through the sweet-scented pines off the mountain side, and have looked down into its depths. A dirt-roofed log cabin covers the entrance. For thirty years it has stood there, eleven thousand feet above the level of the sea; wind swept, storm beaten, silent and unmoved as the mountains that rise behind it. It is full of snow—the old shaft. You cannot enter, if you would, nor would you, if you could. Tons of ice are below. No winds so hot or sun so fierce as to pierce its depths. The secret of that old shaft is safe, and the breath it sends to meet your face on a July day, has something uncanny in it. It's not the cold that sends the creepy shudder through you as you bend above it. In that breath there is something more than cold. Nor is the effect lessened when you look about. Grass there is, and flowers and trees—great gnarled and twisted, ugly, distorted trunks—not one stands upright; but hugging the rocks—tree and grass and flowers seem in desperate, clinging misery to ask of the eternal winds the right to live. Something of that feeling you yourself now have, as, looking up into the hot July sun, you bring your coat closer about you and brace your muscles.

To enter such a region, where did this man who made this shaft; to live and delve here; alone to face the eternal rigors of this hill—this you cannot understand. Unless perchance you know something of the human thirst for gold. Then it is all made clear. Pick up the pieces that lie scattered about you. There is gold in them. Turn to the east or west, north or south; note the tumbled masses of virgin ore that bestrew the ground hundreds of feet on every side; measure them, sound them, there is gold in them. These are but the outcrop of a mighty ore vein that at this point reaches the climax of its strength—but the mere blossom of a plant whose golden roots strike to the porphyry heart of Bald mountain. 'Tis no common plant that bears such blossom, and this he knew who struck the first pick into this surface. Do you understand it now? Higginbotham was a gold seeker—this, and nothing more. It was not in his thought to make history, to blaze the way for future generations. But he has done this. The shaft he sank there thirty years ago laid not merely the foundation of his own fortune. In that work he pointed the way to vaster things—to achievements and wealth that in those early days there were none so bold to even dream of.

Thirty years! Its possibilities known to many, and yet there it stands to-day, just as he left it, who took his fortune from it. That seems incredible. Let us look at it. The Timberline, as its name implies, lies far up the mountain—right on the verge of eternal snows, eleven thousand feet above the sea. It is a peculiarity of the veins of this region that after the first fifty or one hundred feet, the gold is no longer free—cannot be taken out except by the use of expensive machinery. In his work Higginbotham had reached that point. To go further required big money for mill building, which he had, and skill, which he nor the men of that time did not have. Under such conditions to

go further was impossible. Other fields of seeming equal promise were opening. Thither he went, and in the years that followed the Timberline was forgotten. Even if the skill of that time was equal to extracting the gold, the inaccessible nature of the ground prohibited further work. To reach the mine there was but one known method—a method until recently little known in Colorado. This is to drive a tunnel into the base of the mountain. Such a plan would cut the ore 2,000 feet deep. But a two-mile tunnel meant nerve and capital—a combination by no means so common as we sometimes think. So while such a project for the big mine on the hill was often planned, nothing came of it.

In the early spring of '94, the men who have since formed and built up the Big Five combination first came upon the ground. They were progressive men, with an eye single to the possibilities of this neglected region. Beginning with the opening of the Dew Drop, the High Line, the Ni Wot and the Columbia, they kept well in hand, but away from public attention, the ultimate aim and crowning purpose of their work—the opening of the Timberline. Like Higginbotham, who first traced the vein, they, too, followed it—traced it foot by foot, two miles up the mountain, set their stakes and made their purchases. Ready for action then, they turned loose the drills and for three years have pounded their way toward the final goal. What in the meantime they have done, is a matter of recent history. What remains yet to be done, is the thing most worth doing—a fitting crown of a great work. That they will do this thing there is no doubt. That it is worth doing, every man concedes. Indeed, there is yet to be found a man that has been upon the ground who does not see at once—looking at the length



AT THE DIANA SPRING.

and strength of the vein, looking at the depth to which the tunnel will cut the mountain—that right here lie the greatest possibilities of gold mining the mountains of Colorado have ever shown. The agreement of opinion on this point is common, best expressed in the language of Colonel Perry: "I want no better evidence of the practical business sense of the men behind this work, than that it is a part of the plan to drive a tunnel into the heart of this mountain."



THE BIG FIVE WORKS—GENERAL VIEW.

The Dew Drop Mill and Power House.

THE object of the Dew Drop Mill Company is to provide as nearly as possible a perfect mill and power plant; to furnish the power to drive the Adit tunnel and work such mines as may be opened up through the tunnel; to furnish power for electric motors, light and artificial ventilation if needed; to treat all ore coming through the tunnel and extract the gold at the least cost.

As originally planned the mill was to start in a small way first, concentrating the ore and enlarging from time to time as the development of the mines opened might require, improving at every point, until a perfect reduction plant, equal to all future demands was established.

ORGANIZATION: The company is capitalized for 150,000 shares at a par value of \$1 each. There are nine directors and up to the present time there has been sold 76,000 shares of stock at par. This money has been used in building the present mill and power plant. The outstanding stock of the company at the present time is owned as follows:

Dew Drop Mining Company	15,000
Adit Mining Company	20,000
Ni Wot Mining Company	20,000
Columbia Mines Company	20,000
Shares.	

75,000

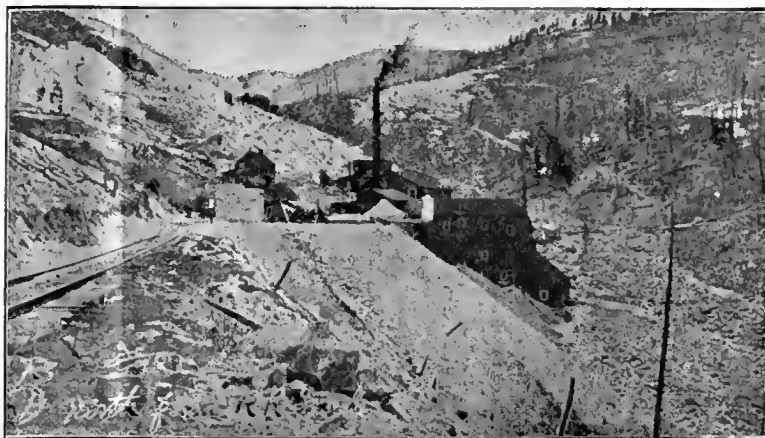
The small balance is owned by the directors of the companies, each one having a sufficient amount to make him a legal director under the statute laws of Colorado. The company has no indebtedness, as will be seen by the statement appended.

PROPERTY OWNED.

GROUND. The Dew Drop Mill Company owns about three acres of land, on which is the Big Five office.

the dwelling occupied by the manager, and the mill and power plant.

POWER PLANT: The power plant is the largest plant for mining purposes in Colorado. The building is an absolutely fire-proof steel and stone structure, 40x80 feet, two stories with large rooms under the roof, making a third story. The large air compressor in this building has an intake cylinder 25x36 inches, and a high-pressure, 15x36 inches, driven by two Reynolds-Corliss engines 16x36 inches. At eighty revolutions a minute it compresses about 1,800 cubic feet of free air, and is capable of driving twenty of the largest power drills, or forty of the new model Leyners. In this machine the compression is facilitated by the most perfect cooling arrangement possible. The intake pipe has a



DUMP AND TRACKAGE SYSTEM

diameter of ten inches and the high-pressure or delivery pipe six inches. The machine delivers into a large air receiver and from the air receiver the compressed air is conveyed to the mines through a six-inch pipe. A smaller compressor, in use for two years, is in the same building. This is a 12x14-inch Leyner compressor, capable of driving two or three of the Leyner drills or one of the larger drills. This can be started up at a moment's notice when the larger machine is not needed, or for any cause should be temporarily disabled.

In addition to the compressors there is a 125-horse power engine capable of driving all the machinery required in the mill. In the lower part of the mill is a small 35-horse power engine, which will be used to drive the tables and jigs. There is also space in the engine room for a dynamo to light the mines and furnish power for tramping ore and waste. In the boiler room there are two 80-horse power engines and room for two others of like capacity. In the south end of the second floor is a large machine shop, adjoining which are tool and machine rooms. In the center of the building is the large company's store room containing all necessary mine supplies. Adjoining this is the miners' quarters—a dry room for the use and convenience of the miners, supplied with wash basins and hot and cold water. There is a carpenter shop on the north end.

Along the west front of the power house is the switch of the Colorado & Northwestern Railroad. And from the tracks is a chute through which the coal is dumped direct to the boiler room below. There is storage space for 100 tons of coal provided. Trolleys and tracks are provided along this front of the building extending out over the tracks of the Colorado & Northwestern in such a way that the heaviest piece of machinery can be lifted easily from the cars and run into the machine shop or lowered into the engine room. The above cut shows the building from the east side.

THE MILL.

The Dew Drop mill is a 100-ton concentrating mill and is fitted with one of the largest Blake rock crushers, three sets of Cornish rolls, two elevators, nine jigs, two Woodbury tables and the necessary trommels, hydraulic sizers and conveyors.

METHOD: The method or plan of concentration in the Dew Drop mill is what is known as wet concentration, and is best adapted to the treatment of sulphide ores. In practical operation four or five tons of ore as it comes from the mine is run through and its value centered in one ton of what is called a concentrate.

In the ores of Ward district we find the pyrites—iron and copper sulphide—contain all the values. The quartz matrix—silica—is barren. Therefore, to get the values it is only necessary to save this iron and copper sulphide.

There seems to be still a difference of opinion as to the better way of crushing the ores in order to save the largest per cent. of this sulphide. There are two methods of crushing in common use: By stamps, crushing as fine as 30 or 40 mesh; and by rolls, which reduces the ore gradually.

CRUSHING BY STAMPS: In crushing sulphide ore with stamps, the portion of the ore which comes under the stamps is crushed too fine so that a small portion of the sulphide

will readily float away in the water. In crushing the sulphide ores for concentration, fine crushing should be avoided. By using stamps this cannot be done. The fines will be in excess, because both the silica and sulphide are pounded in the mortar until the water passing through the mortar carries it off through the screen. The iron sulphide which contains the value, being much softer and more friable than the quartz, naturally pounds up very much finer than the quartz. Therefore, in trying to afterwards make a separation, the sulphides have a tendency to wash off and run away ahead of the quartz, making it impossible to avoid great waste.

CRUSHING BY ROLLS: On the other hand, when ore passes through rolls it goes with a rolling motion, which has a tendency to crack out the iron and copper sulphide, leaving it in its natural cubical form. Indeed, in the use of rolls a large percentage of the mineral can be saved as large as hickory nuts, and a nearly equal amount as large as grains of corn and wheat. At least 50 per cent. of the sulphide can be saved as coarse or coarser than wheat kernels. This leaves only 50 per cent. of the sulphide in a form as fine as it usually comes from a stamp mill. It is true that the silica, as it washes from the jigs, contains minute particles of sulphide, and this necessitates what we call the regrinding or recrushing of the jig tailings. To correct the waste in this form a finer set of rolls should be employed, making a finely granulated product, out of which the sulphide can be taken on Wilfley tables. This method, we find, would give the highest possible saving.

Here is a milling maxim—a self-evident truth: Every time you break a piece of ore, be it large or small, there is a certain minute percentage of loss. It is unavoidable. Therefore, in concentration, break your ores as little as possible; or, to reverse the statement, save all you can as coarse as possible. We hand-sort the ore and save all we can in large blocks without letting it go to the mill at all. The rest is run to the mill, where the same thing is done by machinery. This is the whole principle.

We have already run through the Dew Drop mill more than 4,000 tons of ore and we found by assay tests made from samples taken every thirty minutes, of crude ore, tailings and concentrates, that with rolls and jigs alone, we saved 75



MILL AND POWER HOUSE.

per cent. of the values. The loss, 25 per cent., was in jig tailings and fines. By crushing the jig tailings to 20 mesh, all the iron is freed and with late improvements for handling tailings, from 60 to 80 per cent. of the remaining 25 per cent. will be saved, raising the total saving to 95 per cent.—thereabouts. We gave the mill some very severe tests. We tried waste and low grade rock that gave a value of less than \$1 per

perfection, but furnaces must be added that the bullion may be produced right here on our own ground.

Let me make this point clear: All these improvements and additions to the mill will be provided for and paid for by the sale of treasury stock in the different mining companies already organized and others that will be organized in the future as the tunnel is extended and new mines opened. All the profits derived from the milling of ore in the days to come will be turned over to the different stockholders as dividends. It is the same with the mill company as it is with the tunnel company: All expense, present and future, for driving the tunnel will be provided from the sale of treasury stock in the mining companies; and the returns on all the ore discovered and taken out will be paid back to the stockholders as dividends.

Statement showing the condition of the Dew Drop Mill Company March 31, 1900:

RESOURCES.

Mill, power plant and equipment.....	\$78,785.63
Boulder First National Bank.....	\$ 75.09
W. P. Daniels.....	376.74

Sundry persons.....	551.83
	1,100.95
	<hr/> \$80,438.41

LIABILITIES.

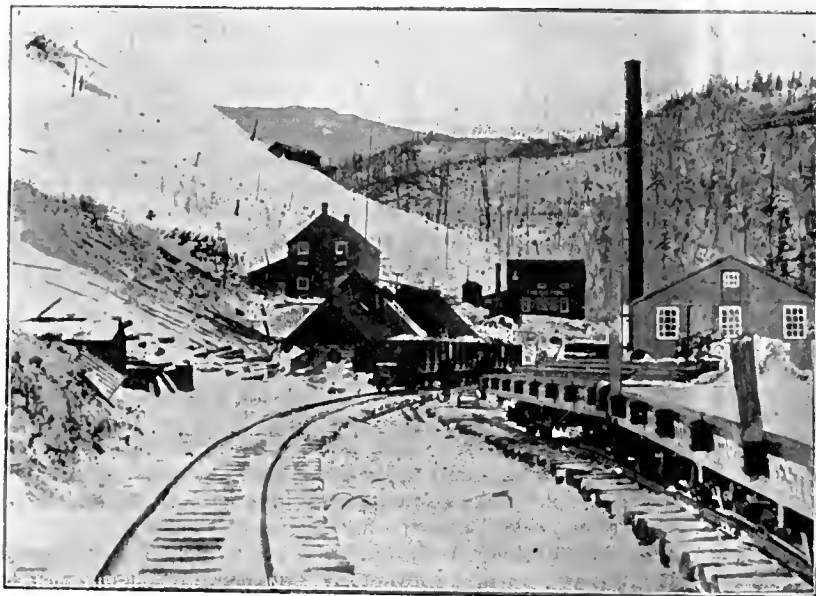
Capital paid in—	
Dew Drop Mining Company	\$15,000
Adit Mining Company.....	20,000
Ni Wot Mining Company.....	20,000
Columbia Mines Company.....	20,000
Sundry persons.....	950

	<hr/> \$75,950.00
Due the Adit Mining Company.....	357.28
Due the Adit Tunnel Company.....	1,647.71
Power operation	1,647.64
Sundry persons	321.78
	<hr/> \$80,438.41

The above is a financial statement of the condition of the Dew Drop Mill Company on the last day of March 1900; and it is to secure a share in this mill and an interest in this company that the Timberline Mines Company will probably invest \$40,000. This gives every person purchasing stock in the Timberline Company an interest in the Dew Drop Mill Company. This is one of the reinvestments.

"Two men and a general utility man to look after conveyors, crusher, loading, etc., will be all the help needed. And say the wages are \$3.50, \$5 and \$3, respectively—\$23 for the 24 hours—\$20 for fuel, a liberal estimate; this makes a cost of 21½ cents per ton, without allowance for stoppages and repairs, oil, etc., but there can be added nearly 100 per cent. and the cost of treating 200 tons a day in the Dew Drop Mill will not exceed 40 cents a ton.

One little point in connection with the Dew Drop mill should not be lost sight of: That the money now paid in by the Timberline Mines Company is on exactly the same basis, shares in all profits just as does the money paid in to build the Dew Drop mill by the stockholders in the Dew Drop Mining Company three years ago, giving Timberline stockholders the advantage of the use of that money for three years. Three years later than the first investment they come in and share all the profits equally. This is the point.



C. & N. CARS AT MOUTH OF TUNNEL.

ton, and made a product worth \$25 per ton. Ten and twelve dollar ore gave the highest percentage of saving with jigs alone—a good indication.

Within the last few months much has been done to bring the mill to a high state of efficiency. It has been connected up with the power house; a new main line shaft has been placed; various adjustments of elevators and jigs have been made, and the mill is now ready to start up with a promise that it will do excellent work. In addition to these changes there has been just added, at an expense of \$5,000, a series of steel bins and an ore sorting house. The bins have a storage capacity of 1,000 tons.

Below these bins a granite foundation is already in for a large rotary rock breaker with a capacity of twelve to fifteen tons an hour, 300 tons a day of twenty-four hours. From this rock breaker an elevator will be constructed to convey the ore into the upper part of the mill, where it can be passed through sizers and delivered to the different bins and rolls as required.

In the lower end of the mill the Wilfley tables will be placed for handling the finer product; on the lower floor a dryer will be placed, where all concentrates will be dried for shipment.

As it now stands, the Dew Drop mill is ample for the present needs of the mining companies owning the same; but it is evident from the work that we have already carried on in Ward camp, that when the tunnel reaches and develops the Columbia mine and extends on west to the Timberline, and the present milling facilities will be found altogether inadequate. It will be later necessary, not only to have a mill of great capacity in the highest degree of



ADIT TUNNEL ENTRANCE.

Adit Tunnel System, Its Possibilities.

WHAT HAS come to be known as the Adit tunnel system, in Ward district, was inaugurated something more than three years ago. In its inception it was planned to open the Adit-Dew Drop lead a distance of 6,000 feet—the total length of the lead owned by the Adit Mining Company. The adoption of this plan for opening the lead was done after a very careful study of the situation and a perfect knowledge of the wealth of mineral that lay in its course. It was seen from careful surveys made that the properties owned by the Adit Mining Company could be opened to a maximum depth of 1,150 feet, and if extended westward in the same course for an additional 3,000 feet, the Timberline country could be opened to a depth of 1,800 feet or more. At a point in California gulch a site was selected and a 364-foot cross-cut run to the lead. This point was carefully selected and sufficient ground for dump and mill privileges secured. A concentrating mill with a daily crushing capacity of 100 tons was built at the mouth of the tunnel, and here was installed a compressor plant for driving machine drills. A complete forge and trackage system was established and the work of driving has been steadily pushed for the past fifty months. In that time a total distance of 3,781 feet on the main line, and 1,788 feet on the North Branch has been made and the New California and Dew Drop mines opened from end to end. The end of the tunnel is into the Highline ground about 800 feet. The maximum depth at present attained is 700 feet. As stated above the location of this tunnel was very carefully selected. Its projectors realizing its immense future value as a common carriers of ores and a drainage system, entirely apart from the value of the mineral which would be opened in its course. To fully appreciate this an examination of the contour and plat of the country, on center page map will show that the Adit tunnel occupies the central portion of the mineral belt and is the lowest practical point in the district. The plane of the tunnel extended in any direction into the district cuts every point from 300 feet to 1,800 feet. Being

as has been said, in the very center of the mineral district, any point can be reached in a few hundred feet—less than 9,000 feet will penetrate the remotest points—it is evident that the Adit tunnel as a common carrier of ores and a drainage system becomes of immense commercial importance.

To better understand its commercial importance, the working capacity of the tunnel as projected should be noted. The bore is eight by eight and one-half feet in the clear; there are double tracks the entire length, twenty-four-inch gauge, laid on sawed ties. The rails are twenty-pound steel. Beneath the track is a closely boxed waterway, twelve inches deep and twenty inches wide, having a drainage capacity equal to a discharge of three hundred cubic feet of water per minute—more water than the whole region is likely to ever furnish, no matter to what extent the tunnel system may be extended. The grade is one-quarter of one per cent.—three inches to the hundred—and the ore cars in trains pass and re-pass, requiring the least possible power. Planned and equipped in this way, one thousand tons of ore and waste can be handled daily without in the least taxing the capacity of the tunnel. At an average charge of 50 cents a ton, the ultimate daily revenue of the tunnel will reach \$500, or \$150,000 a year, exclusive of the tax for drainage, which can be levied on all mines reached by the system, which will raise its total annual revenue to a quarter of a million. Another point tending at once to increase the commercial value of the tunnel is the fact that the present mill standing at the mouth of the tunnel offers in its situation and plan an opportunity for the establishment right here of an immense mill and reduction plant, which will make of this point the business center of the entire region, and secure to the tunnel for all time the delivery of the ores of the district. It is conservatively estimated of the joint enterprise of mill and tunnel, when worked out to its highest degree of perfection, that the annual earnings will exceed \$500,000, which means big and continuous dividends to all interested. This is of course entirely

aside from the value of the ores handled and treated, which may be safely placed at \$1,000,000 to \$2,000,000 annually.

But the volume of money and business involved in an enterprise of such stupendous possibilities, it was early seen, was hardly within the province of a mining company to undertake. It was seen that a mining company, attempting to extend its operations along such lines, would meet with many entanglements, and could not secure to itself the highest benefits. At the same time the Adit Mining Company was not disposed to fail of securing to itself the benefits of its foresight and enterprise. These considerations eventually led to the organization of the Adit Tunnel Company, which is really a wheel within a wheel, whose business it will be to direct and control the affairs of the Adit tunnel in its contemplated extension to the entire district, in the interest of all mines reached. The organization of this company simplifies operations and insures the continual care and the uninterrupted progress of the Adit tunnel.

Before passing to another phase of this enterprise, it might be well to call attention to the advantages which the tunnel system of opening and operating mines has over all other methods—a feature that originally prompted this undertaking, and is indeed the only excuse for its existence. It has been found that the total cost of driving the Adit tunnel, including everything, timbers, tracks, superintendence and labor, is something less than \$20 per foot driven along the vein, and probably \$30 per foot to cross-cut. A shaft may be sunk the first hundred feet at the same cost, but the cost increases rapidly with every additional foot, while the cost of the tunnel drive remains practically the same no matter to what distance it may be driven. Conceding the same cost by either method, it is in the subsequent operation that the tunnel shows to advantage. Operating through a shaft means expensive hoisting and pumping machinery, the continuous operation of the same, and a consequent increase in the cost of mining. Operating through a tunnel, neither pumping nor hoisting machinery is required and the cost of mining is reduced one-half.

A mine that cannot be made to pay, operating through a shaft, may return a splendid profit operated through a tunnel, while a paying mine, one returning \$100,000 a month, may be made to return \$200,000 through a tunnel arrangement. Such facts as these are now recognized, and everywhere throughout the gold regions of the state systems of tunneling are under way, cutting deep into the heart of the mountains, and are justly considered by investors the safest, best and most remunerative ventures into which capital can enter. In Cripple Creek alone there are now fifteen of these tunnel systems far into the hills. At Idaho Springs five of these are driving into Seaton mountain and far into the rich regions of Central and Black Hawk, four miles beyond; and at the Tom Boy, in the San Juan, there is another of great importance. Millions of money are behind these ventures, millions are the certain returns, for experience has shown that the way to mine is to go in on the ore at the lowest point, not at the highest; and the way to pump water is to turn it over to the natural law of gravity in a tunnel and let it care for itself. It is estimated that the present total production of the entire Ward district is less than one million, and that more than half that amount is wasted in the expensive methods employed, and consequently lost to the stockholders. More than half a million annually wasted in this little district alone—a half million that will be saved to investors and increased to millions, when the Adit tunnel system reaches these mines.

In taking up this matter in detail there is so much to consider that to prevent confusion the various mines reached by the Adit tunnel system will be considered in groups. What may be for convenience called the

ADIT-DEW DROP-TIMBERLINE GROUP

lies on the course of the main line of the system.

It should be stated that in discussing these groups in their relation to the tunnel system, the figures and estimates made are employed simply as a basis from which to reckon, and no pretense is made that they are based on actual knowledge, a claim that in the present state of development it would be absurd to make.

Turning to the plat of the region, pages 10 and 11, it will be seen that after leaving the California the main line enters the Dew Drop ground at a depth of 300 feet. Before traversing more than half the length of this claim, the depth reached is 600 feet, perpendicular, or 650 feet measured on the dip of the vein. This gives an average depth on the vein of 487 feet for the entire length of 1,548 feet. Assuming an average width of three feet for the entire vein, there lies in the Dew Drop mine above the level of the Adit tunnel 226,162 tons of ore which, at an average value of \$10 a ton, makes the total value of this block of ground \$2,261,620. As there are two distinct veins already cut in this ground, and the average value is above \$10 and known to increase in value with depth, it is not improbable that there are nearly \$4,000,000 of gold in the Dew Drop mine above the level of the Adit tunnel.

Continuing the main line west into the High Line ground, the average depth reached for the entire length of the claim is 700 feet perpendicular, or 760 feet measured on the dip of the vein. Assuming, as before, an average width of three feet for the entire vein, there lies in the High Line, above the level of the Adit tunnel, 342,000 tons of ore, which at an average value of \$10 a ton, makes the total value of this block of ground \$3,420,000. The average value of the High Line ore is much greater than this. Out of the fifty-foot shaft sunk on the ground the average values found were \$30, and, as all these veins strengthen and enrich as they move west, the estimate here made is entirely too small.

Beyond the High Line lies the Majestic in direct course of the main line. Here the average depth reached for the entire length of the claim, 1,500 feet, is 984 feet perpendicular, or 1,064 feet measured on the dip of the vein. Assuming an average width of three feet for the entire vein there lies in the Majestic, above the level of the Adit tunnel, 478,800 tons of ore which, at an average value of \$10 a ton, makes the total value of the ore in this block of ground above the level of the Adit tunnel \$4,788,000. But an examination of the surface of the Majestic shows two distinct veins, each of them much larger than anything shown on the vein east; in fact, the biggest surface showing in the entire district is on this ground, and its possibilities of gold production are simply incalculable.

From the Majestic the main tunnel line enters the Diana and reaches in this ground an average depth for its entire length of 1,418 feet perpendicular, or 1,530 feet measured on the dip of the vein. With an average width of three feet, from this block of ground above the level of the Adit tunnel may be taken 688,500 tons of ore, which, at an average value of \$10 a ton, makes the total value of this block \$6,885,000. In making this estimate a width of three feet is assumed, but from surface indications and the known fact that at this immense depth the ore body will increase three fold in strength, this estimate is safe.

Beyond the Diana the main tunnel line enters the Tempest ground, and here the average depth reached for the entire length of the claim is 1,850 feet perpendicular, or 1,994 feet measured on the dip of the vein. An average width of three feet allowed for this block of ground above the level of the Adit tunnel gives a total tonnage of 897,300. At an average value of \$10 a ton we have here \$8,973,000. Continuing the main line into the Timberline beyond, the maximum average depth on the Adit-Dew Drop lead is attained, 1,990 feet perpendicular depth or 2,142 feet measured on the dip of the vein. In this block of ground, 1,500 feet long, 2,142 feet deep and three feet thick, there lies 963,900 tons of ore, which, at an average value of \$10 a ton is worth \$9,639,000.

It will be noticed from an examination of these figures that the value of the main line of the tunnel as a method of opening ground increases as it advances into the mountain—advances from \$2,261,620 in the Dew Drop to \$9,639,000 in the Timberline. From this group alone, the total tonnage which would have to pass over the main line reaches the enormous figure of 3,610,862, amounting in value to \$36,018,620 and yielding to the Adit Tunnel Company a total revenue for haulage alone of \$1,815,431. But the main line is by no means exhausted at this point. A branch from the Timberline will cut to the heart of Bald mountain in a distance of 1,000 feet. Here is a whole mountain of porphyry, beneath which dips the great Puzzler vein and a dozen others—a point to which it would be a brilliant enterprise to drive if never a pound of ore lay in the whole long drive of the main line for 9,000 feet. That Bald mountain is inexhaustibly rich in mineral there is no doubt, and the line of work that reaches to its heart will open mineral ground that generations of mining will not exhaust.

THE COMET-JUSTICE GROUP.

Returning to a point on the main line, near the end of the High Line, the Comet, Justice, Comstock and others are located but a few hundred feet south of the main line. A branch from this point will cut this country to an average depth of 800 feet. It's a rich country. The veins are big and numerous. Just over the hill beyond the crest of the Comet lies some of the largest and richest float ever seen, masses weighing ten to fifty tons, clearly indicating the wealth that lies below. Here but little mining has been done, for the owners realizing what the Adit tunnel system means, are waiting its advent and are anxious and willing to enter into a contract for opening their mines. Considering merely the three known veins that course along here, there is a total tonnage of 1,080,000—a revenue to the Adit tunnel in haulage alone of nearly \$500,000.

THE D. & R. G. GROUP.

Just north of the main line lies the D. & R. G. group, paralleling the Dew Drop-Adit lead on the north and less than 500 feet distant. After turning the great "North Branch," of which we will speak later, a line run upon this lead will gain depth more rapidly than in any like distance in the whole region. Here the mountain rises so abruptly that in a distance of 1,000 feet more than 1,000 feet in depth is gained. This lead shows itself of great strength at the surface and will yield an immense volume of ore. To place the Adit tunnel revenue for haulage from this lead at \$600,000 is conservative.

THE GOLD CHIEF GROUP.

This group lies just beyond the point where the "North Branch" leaves the main line, and is distant less than 500

feet. These veins cut the Adit-Dew Drop vein at a sharp angle, and while not as strong or large as the others we have been discussing, are very rich and will be cut to a depth of 750 feet. This property is chiefly owned by persons connected with the Studebakers of Indiana, and they, like the owners of the Comstock, are ready to enter into contracts with the Tunnel company to open their ground. For the past year they have been driving a shallow tunnel on the Chief, but have suspended operations. With the depth the "North Branch" of the Adit tunnel will give them they realize that their mines can be opened cheaply and operated at a great profit, and they are willing to await its coming. From this group the total revenue to the Tunnel company for haulage will be less than from any other point, but is worth at least \$200,000.

THE NORTH BRANCH.

In entering upon a discussion of the "North Branch" it will be necessary to depart from the group method and speak of the country through which this most important lateral passes in detail. It should be stated that this branch was originally projected to reach the Ni Wot mine and the rich mineral region lying north as far as Spring gulch, its ultimate length and expansion by laterals being practically without limit, penetrating as it does the heart of the district to great depths. After leaving the vicinity of the "Gold Chief group" the line for 2,300 feet traverses an open country, that is, a country on which but few mineral locations have been made. There are rich veins crossing here. Of this there can be no doubt, for to the east they plainly crop, but at this point are buried beneath the wash of the great moraine. It is on this account that right here in the heart of a rich district, midway between the Adit-Dew Drop on the south and the old historic Ni Wot on the north, lies an open country. Through this region the "North Branch," running at right angles with the veins, will cut them at an average depth of 550 feet, rising to 650 feet as it reaches the Ni Wot ground. This open country is by no means the least interesting, nor the least valuable feature of the "North Branch." By the rights conceded to tunnel companies by the late decision of the United States Supreme Court this country is now an absolute possessory right of the Adit Tunnel Company, and every vein cut in the course of the tunnel not already located becomes the property of the Tunnel Company. To still better secure this territory, eight lode claims have been located by the Tunnel Company, covering a large portion of the surface ground. That a dozen or more veins will be cut in this distance is almost certain, and were the object of the "North Branch" none other than to reach this country the venture would be of great commercial value. As a prominent mining man of Colorado, who is thoroughly familiar with the ground through which the North Branch passes, expresses it: "I predict that the ore bodies cut by the North Branch, before reaching the Ni Wot, will pay for the tunnel many times. And if I had the choice of the mineral under the Ni Wot—as big and rich as it undoubtedly is—or that which will be cut by the tunnel in opening the ground leading to it, I would take the latter." Every vein cut will be opened and ready to operate the day the drills strike it—drainage and haulage ready supplied, milling facilities most perfect, and nothing remaining but to take down the ore—east 1,500 feet on every vein cut and west 1,500 feet, or 15,000 feet, for in that direction toward the main range all veins

strengthen and enrich—the country is still all virgin ground, no pick having yet been struck or a claim established. To estimate anything of the possible future value of this country to the enterprise would be impossible. There are no data to reckon from. But that it will, when developed, return millions to-morrow for the thousands invested to-day there is no doubt.

Before entering the Ni Wot the “North Branch” crosses the Baltimore, of which little is known beyond the



JUST OUT OF THE TUNNEL.

fact that there is here good ore seen in a shallow shaft, and its owners are willing to concede a good bonus to the Tunnel Company for opening their property. But the great factor of wealth, and the original inspiration that led to the extension of this “North Branch,” is the old Ni Wot and Columbia ground. The “North Branch” will cut this region to an average depth of 800 feet, perpendicular, or nearly 1,000 feet measured on the dip of the vein. It will in this one act cut one of the greatest gold mines ever discovered to a greater depth than has ever yet been reached in the camp, and will put it at once not only among the list of producers, but at the very head of the column.

It is conservatively estimated that the Ni Wot and Columbia mines opened their entire length, 4,500 feet, to this great depth, will be equal to producing 500 tons of high-grade ore each day for the next half century. No one who has read the history and the testimony of expert opinion can doubt this, and through the Adit tunnel, so ably planned, when carried to this point, the golden treasures of the Columbia and Ni Wot will pour, with the least cost of production, and they will again take the place which for twenty years they held as one of the greatest gold veins ever discovered.

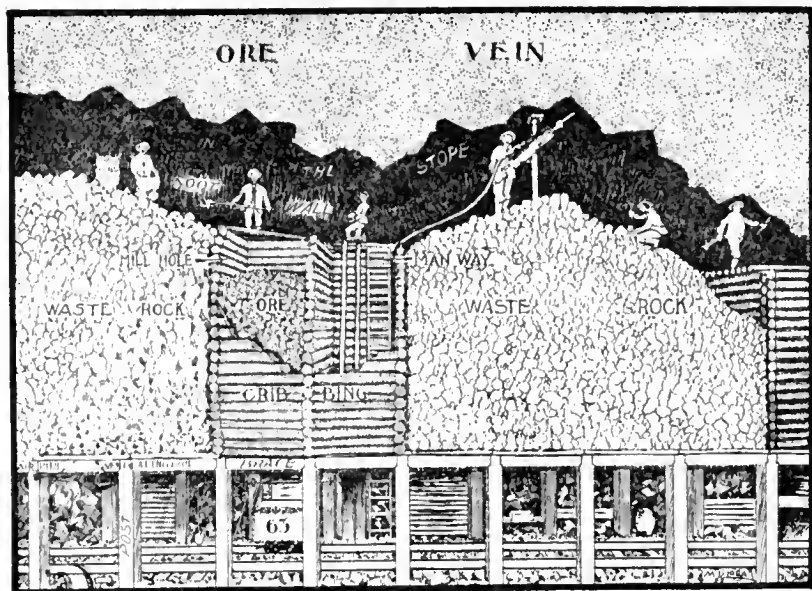
But with the Ni Wot and Columbia this marvellous tunnel system does not end. Eastward on the vein sub-laterals will be extended, traversing in their course the rich ground

ground in which Benson estimated there lies \$10,000,000 above the level, enters the Utica below its present workings, furnishing drainage and cheap transportation for the entire group, doing away at once with all expensive trams, hoists and pumps, and establishing a big and continuous revenue for the Tunnel Company. To estimate what this revenue will yet become is impossible, but from the Columbia, Utica and of the Madeleine, Teller, No. 5, Sullivan, Baxter and Boston, Ni Wot alone, were all the intervening ground unprofitable,

the revenue from these points would run far into the thousands every year. Considering the country westward from this point—west from the Columbia extension—no proper notion can be formed of its possible mineral wealth. The whole country is covered with deep slide for miles. Prospecting this region on the surface is and always must remain impossible. But from the level of the “North Branch,” 900 feet beneath the surface, this region can be known and its wealth laid bare. One thing of this region only is certainly known: the great veins strengthen and enrich as they move west to the main range, and he who successfully follows them into this country will open wealth greater than was ever seen in the district. And one other point should be emphasized, the whole region west, with all its buried riches, is still unclaimed, and is even now the property of the Adit tunnel system, for by no other method can it ever be reached or touched.

But this is not all. Still northward, on beyond the Columbia-Ni Wot, can this “North Branch” be pushed—pushed into the Stoughton ground, the Sunnyview, the New Market, crossing and branching east and west into the great Humboldt vein, down into Spring gulch into the Star and Wirth, out into the region of the Giles and Colorado, and even extending itself to the region of the Modoc—every foot of which is a rich country, and every foot of which will eventually pay tribute to this great tunnel system.

This region directly north, in the course of the tunnel, observed in detail, will be seen to be very rich in mineral. Though known to be coursed by many veins and almost entirely covered by locations, very little development work has been done here. But there are several groups of mines within 1,000 feet of the Columbia that will be cut to a great depth by the branch extended. The Stoughton group is one of these. The North Branch of the Adit will cut this more than a thousand feet deep, perpendicular, and by sub-laterals west will reach the Sunnyview in a short distance, and eastward in a like distance will enter the Newmarket. These latter mines are the most recent strikes in the camp and are of great importance in the extent and richness of the ore, and when opened to a depth of 1,000 feet through the Adit will undoubtedly equal in production the best mines in the camp. Beyond these lie still another group along the course of the great Humboldt vein, said by many to be the biggest and richest lead in the district. On this vein also little has been done except in the



BREAKING ORE IN THE STOPES.

vicinity of the Humboldt mill. Here is a group of mines that offer a splendid opportunity for capital. Indeed, the value of this extensive property is now being passed upon and eastern parties are ready to purchase providing proper arrangements can be made for an extension of the Adit system to this point. Some correspondence has already passed on the subject, and since through the organization of the Ni Wot Mining Company, the extension of the "North Branch" is assured, the Humboldt group becomes one of the great objective points of the system. Still beyond this point lies another group—less than 2,000 feet in direct line north from the Ni Wot—the High Flyer—Boulder county, a vein said to be thirty-five feet wide at the surface, and worth \$12 to \$15 a ton. The best informed miners speak of this region as the richest portion of the camp, and cut by the Adit system to a perpendicular depth of 1,000 feet it will undoubtedly become a most important source of revenue to the company. The Grand View, Lake Shore and Cardiff are still other groups, all lying within a maximum distance of 3,000 feet from the Ni Wot, and there is not the least doubt that every one of these will in the course of time become tributary to the tunnel system. To make any approximation of what the development of this country would add to the revenue of the tunnel company would be mere conjecture, but that they offer a rich field for the further extension of the enterprise there is no doubt, and will eventually add millions to the gold production of the district, made possible only through the Adit.

From the estimates made on the "Adit-Dew Drop-Timberline group" along the tunnel main line, some fair idea not only of the possibilities of the system may be gained, but it will help to form a notion of the probable value of the enterprise, when pushed to its ultimate possibilities. From this one group alone we have shown an ultimate

revenue for haulage alone of \$1,815,431—this amount of revenue for handling \$36,000,000 of wealth from this one group, a tax of five per cent. on the amount produced. Assuming that the average daily product of all the mines reached by the Adit tunnel system extended as here outlined would be only 1,000 tons of an average value of \$10 a ton, and levying on this a five per cent. tax, the daily income of the system would be \$500 a day—\$150,000 a year. Add to this the drainage tax, and the earnings from power furnished, and one can get some fair idea of the commercial value of the enterprise. It means a total annual revenue of \$200,000.

Thus far in detail we have worked out the "Adit Tunnel System—Its Possibilities." We have done this with an intimate knowledge of the country and with our hand upon all possible date. We have shown what its possibilities are and its possible revenue. We have shown that this revenue arises from simply a tax of five per cent. on the production, and this tax of five per cent. on the production of ores handled through the Adit tunnel system represents one-half the cost of mining. A system that makes it possible to produce gold at a cost of 10 per cent. is one that must commend itself to all—that has commended itself, and will make the opening of these mines through this system the foremost gold mining enterprises in point of production and profit that has ever yet been undertaken. For the production, the mines themselves speak; for the profit on the production the system speaks; and where a dollar is produced at a cost of a dime, there is no chance of failure, and certain fortune waits.

The Adit tunnel's ultimate revenue will reach \$200,000 a year. In this income every shareholder in the Timberline will have a large share, for their foresight and money have worked out the plan of the Adit tunnel system and are now shaping it to include the entire camp. The money is all pledged—the tunnel is paid for nearly through the Timberline



UP CALIFORNIA GULCH.

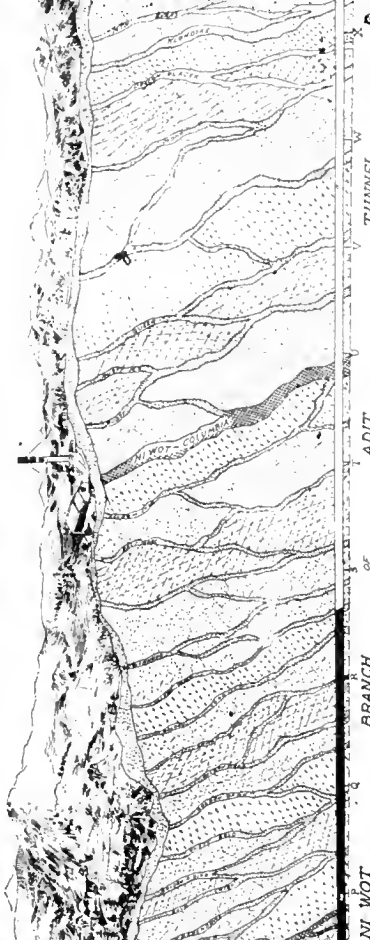
ADIT TUNNEL SYSTEM

BIG 5 FIVE

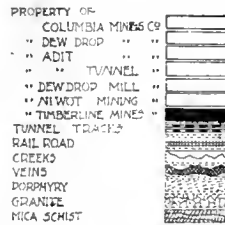
COMPANIES.

Frances, FORTY-FIVE MILES NORTH-WEST OF DENVER, Colorado.

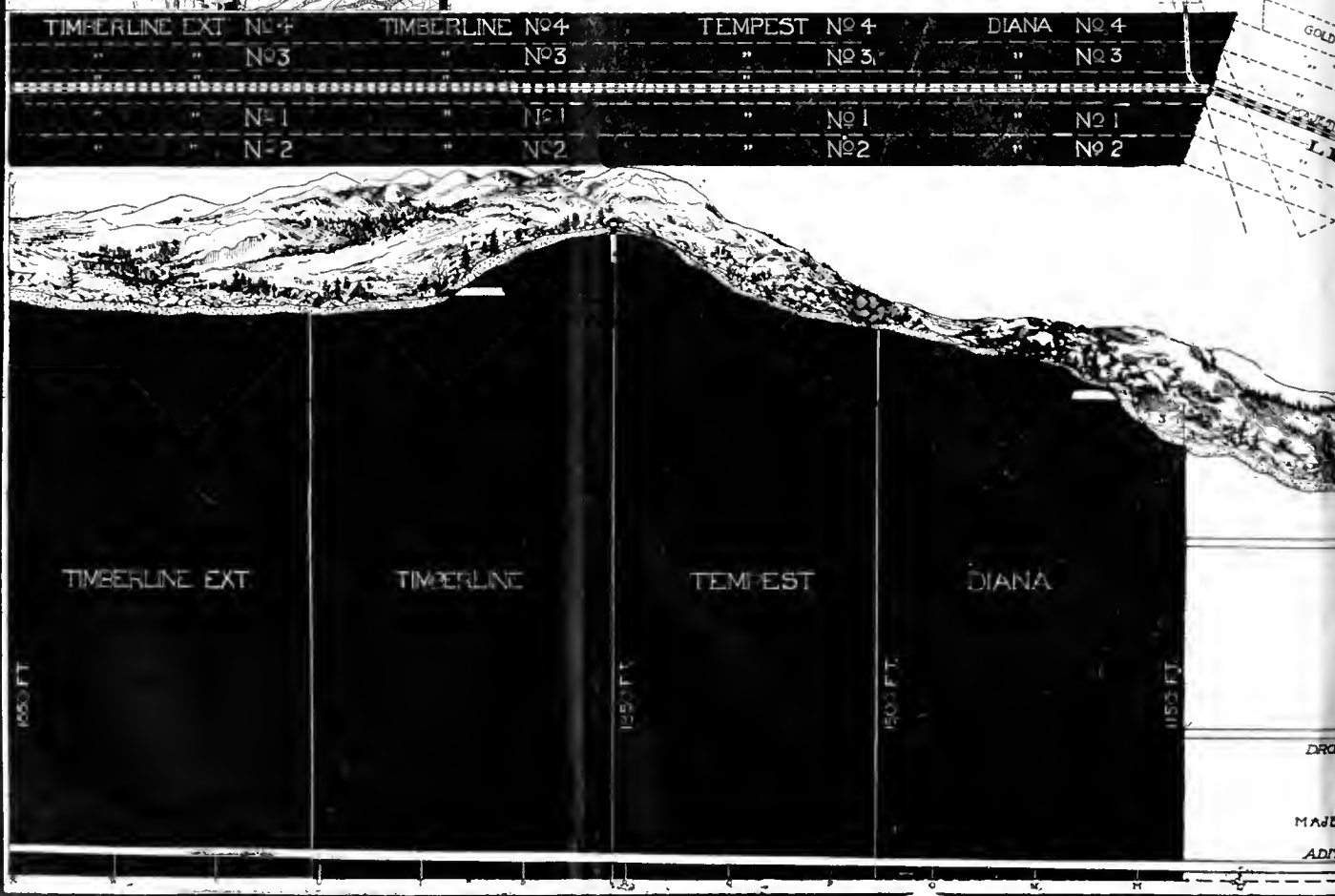
OFFICE: 793 KITTREDGE BUILDING DENVER

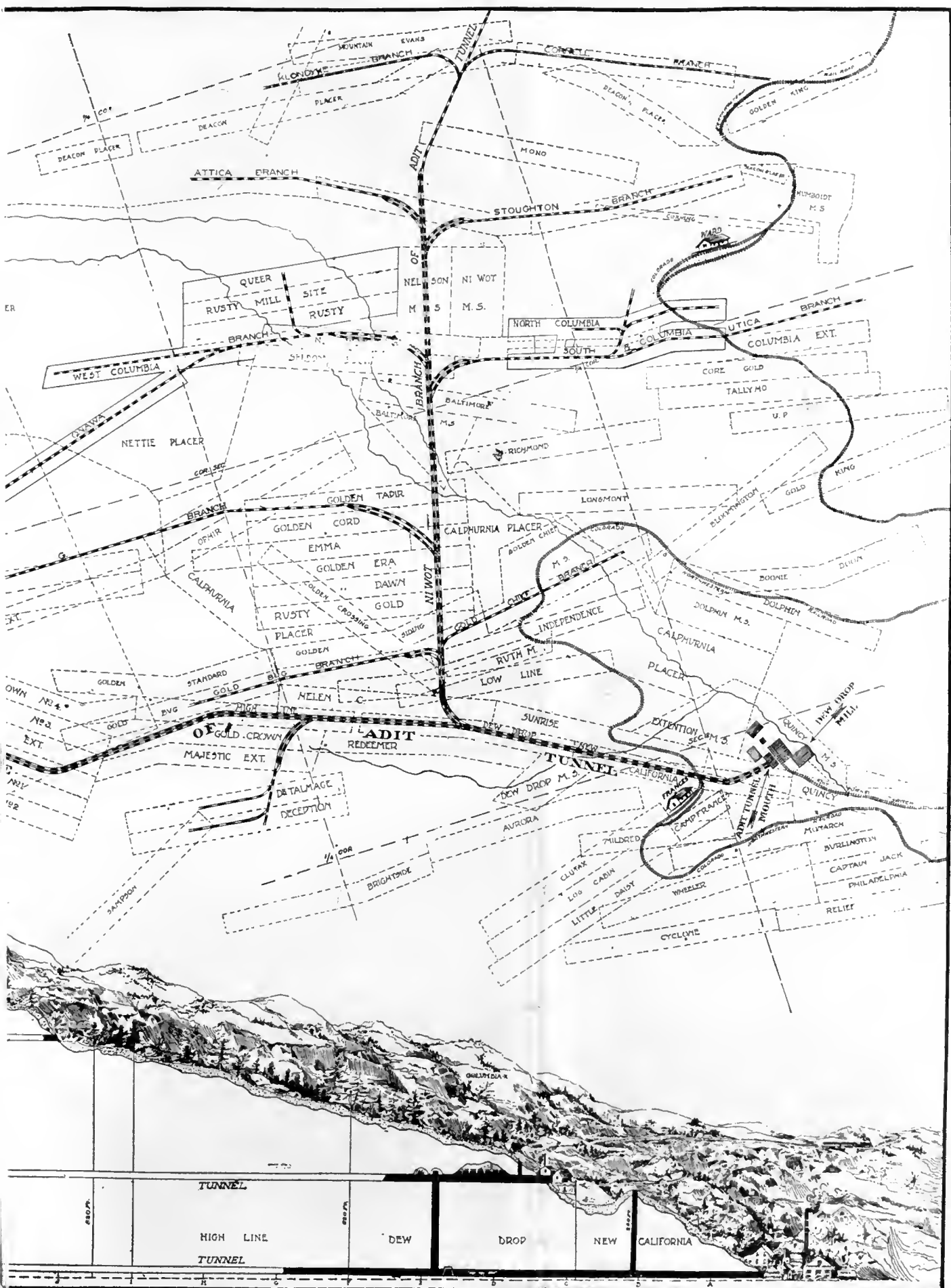


KEY.



SCALE ~
1" = 500 FT.
A "X" MARKS 500 FT. APART.





and to open the Columbia vein on the north. So far as the finances are concerned, the tunnel is at these points now. It remains for the Timberline to sell the balance of its stock and turn it into the tunnel and become the largest owner in this tunnel system. The opportunity to harvest a fortune already ripened and waiting was never better. Conceding everything claimed for the system up to the present time, equally great, even greater possibilities lie beyond for those who have the foresight to grasp them.

Herewith is a financial statement showing the condition of the Adit Tunnel Company on the 31st day of March, 1900 :

RESOURCES:

Main Line.....	3781 feet	} and Equipment ..	\$127,214.74
Ni Wot Branch.....	1788 feet		
Upraise to Dew Drop..	326 feet		
Upraise in California ..	90 feet		
Cross-cuts.....	355 feet		
Dew Drop Mining Company			35,422.07
Adit Mining Company.....			7,753.62
Bills receivable.....			750.00
Dew Drop Mill Company			1,647.71
W. P. Daniels for pay roll			\$6,599.54
Boulder Bank			54.84
			6,654.38
Sundry persons.....			451.38
			<u>\$179,893.90</u>

LIABILITIES.

Capital paid in by—	
Adit Mining Company.....	\$45,000
Ni Wot Mining Company.....	65,000

Columbia Mines Company.....	\$30,000
Sundry persons	955

	<u>\$140,955.00</u>
Columbia Mines Company for stock.....	10,532.59
Ni Wot Mining Company for stock.....	19,501.96
Sundry persons.....	8,904.35
	<u>\$179,893.90</u>

There is ample money pledged to carry forward the work. There is ample reserve treasury stock in the mining companies to take care of all future needs. The money you pay for the treasury stock of any one of the Big Five Companies is immediately made a safe and profitable re-investment in the tunnels and mill.

The Adit Tunnel Company, as well as the Dew Drop Mill and Sunset Tunnel are constructed, driven and completed for the sole benefit and use of the mining companies. The money for the tunnels and mill is the money paid in by the subscribers to stock in the mining companies. The aggregate amount due on stock and available for the tunnels and mill April 1st, 1900, was \$406,000. Unsold stock in the different mining companies will nearly double this amount, depending somewhat upon whether we sell it right away at development prices or hold it until production commences and then sell it at near its actual value.

Into this safe and profitable investment of the mill and tunnel companies is where we place the money you put up to develop the Timberline mines. Can anyone else take development money for a mine and give you a dividend-paying reinvestment?

Turn on the searchlight of investigation and glean all the facts and conditions connected with the Timberline Mines Company, and the investment in the other companies, and you will not find a flaw or reasonable excuse why you should not put a portion of your monthly income into it. We not only give you more for your money than you can get anywhere else, but we do this on such liberal terms that by the time the investment is fully made, large dividends will come to you regularly.



The Timberline Mines Company.

Organization.

Organized under the laws of the State of Iowa.

Capitalization \$30,000; number of shares 3,000,000; par value one cent.

Stock full paid and non-assessable. Absolutely no individual responsibility.

The mines are located at Frances, Ward District, Colorado, about fifty miles northwest of Denver. The company is a part of the Big Five combination—having all the advantage of an established, going enterprise.

PROPERTY OWNED.

The Diana	5 acres
The Diana No. 1	5 acres
The Diana No. 2	5 acres
The Diana No. 3	5 acres
The Diana No. 4	5 acres
The Tempest	5 acres
The Tempest No. 1	5 acres
The Tempest No. 2	5 acres
The Tempest No. 3	5 acres
The Tempest No. 4	5 acres
The Timberline	5 acres
The Timberline No. 1	5 acres
The Timberline No. 2	5 acres
The Timberline No. 3	5 acres
The Timberline No. 4	5 acres
The Timberline Extension	5 acres
The Timberline Extension No. 1	5 acres
The Timberline Extension No. 2	5 acres
The Timberline Extension No. 3	5 acres
The Timberline Extension No. 4	5 acres
Total	100 acres

TITLES.

The title to this group of twenty claims is vested in the Timberline Mines Company, without incumbrance or obligation of any sort.

OUR PLAN.

Co-operative Mining Adapted to the Wage Earners of America.

We never try to discover or originate anything which is already discovered or originated. We do, however, start from the highest point of perfection as we find it, advance it, enlarge, perfect and adapt it to our own requirements.

When we concluded to enter the mining business, we looked for the bottom principles and examined the conditions which lead both to failure and success. The glittering successes on the foremost edge of that time were the Moffat Syndicate, the J. E. Reynolds Syndicate, De Lamar of Utah, Clark of Montana, and the Flood-Mackays of Nevada.

The first question to decide was how these men make such great successes and how can we improve their methods so as to out-general and out-success them. We found, upon careful study, that their investigation and selection of properties were

PRODUCTION.

There has been but a nominal production, the records of which are lost in tradition. But the ground has been carefully prospected for many years and its value established.

DEVELOPMENT.

A single shaft of unknown depth; three short tunnels driven on the vein. The ground will be opened by the main-line of the Adit Tunnel, now pushing towards it at the rate of 120 feet a month.

DIRECTORS.

George R. Fuller, Rochester, N. Y.
 William P. Daniels, Frances, Colo.
 N. C. Merrill, 703 Kittredge Building, Denver, Colo.
 A. S. Hazen, Denver, Colo.
 A. Graves, Dow City, Iowa.
 George S. Redd, 626 Kittredge Building, Denver, Colo.
 Jonas Stewart, M. D., Masonic Temple, Anders, Ind.
 John F. Hinckley, 411 Park Building, Pittsburg, Pa.
 D. T. Denton, Lakeview P. O., Duluth, Minn.

OFFICERS.

President and Manager—Wm. P. Daniels.
 Vice-President—George R. Fuller.
 Secretary and Treasurer—N. C. Merrill.

EXECUTIVE COMMITTEE.

George S. Redd. Wm. P. Daniels. N. C. Merrill.

no better than we ourselves were able to do; that the secret of their success lay in the fact that after commencing the development of a proposition they carried it on year after year until the property was fully developed and made into a great producer—perpetual, continuous and complete development never failed to win for them. Mines are made not found. We observed that each syndicate consisted of a few investors under a carefully chosen financial head and a competent mine manager. Each one of them took a fourth or a tenth interest and put up his money month by month as the work went on, never letting up until they had developed the property into a big paying proposition.

Below this class of operators, throughout this great Western country, was a great number of lesser ones; and through and among these there was an interminable jangle and hauling at cross-purposes. The financial promoters lacked a competent mine manager; competent mine managers were unable to find financial backers. Where the selection of prop-

erties was good, the plan of opening up was deficient; or where the plan was good the mine management was deficient. Where the plan was all right, the mines good, and the financial management competent, then the associates who were putting up money either got disheartened or dissatisfied; or wanted to run the enterprise themselves, so that through an interminable jangle, wrangle and play of cross purposes, failures were common and successes rare among this class of operators.

A chief evil operating against success in these instances we found was the large investor in the East. These men were continually trying to get control—to get a cinch on the smaller investor, to radically change some of the fundamental principles of successful mining; to experiment with some new process, or enforce some Eastern theory.

We said Moffat's plan is the one, and we will adapt it to the small investors. We will discard every big investor, we will not permit him to get a controlling interest in the enterprise and management; neither will we permit him to inject any false theories or plans, but will go ahead with a straight, ordinary, common-sense mining plan. We associated with us the best and most capable, skilled and business-like in management and directors and resolved to unite small investors in a large co-operative plan. To this end we laid our plans in the beginning and at the organization of every company had arranged to raise ample money to carry out the development fully and completely. We arranged for a surplus for every unseen contingency, and made it impossible for any stockholder or others to have an advantage over their associates, keeping every one on the same plane, with the same advantages, believing in the long run that far greater success can be obtained in that way than by any other method. The goal we sought is now in sight. Even now in the formative stage of the Big Five proposition we see and know that one of the greatest mining successes ever undertaken in Colorado is just before us.

At first we were laughed at, scoffed at, because our business they said was "Too slow;" but now we everywhere have the highest credit, and looked up to as one of the foremost mining enterprises in the state, and the highest compliment we receive is that the method of co-operative mining and the installment plan of subscription has been adopted by a great majority of recent organizations, especially where the object is to thoroughly develop a legitimate mining enterprise.

That the principle—co-operative mining—was correct, safe and of infinite possibilities, the work of the Big Five thus far has proven. Nor have we been less successful in the plan of mine development we have followed—a plan that makes possible the highest degree of perfection and success in co-operative work.

The Adit Tunnel, as planned and carried forward, will open more rich territory at less cost than any method ever before employed. It unites in a common plan all the great

mines of the district, and makes every mine so opened either a sharer in the tunnel profits or a contributor to its revenues. It is a distinct corporation, capitalized for \$500,000, having its own board of directors. In this great tunnel system every man having stock in either the Ni Wot, Dew Drop, Columbia or Timberline mines is interested. Here is given to the investor a double source of revenue from a single investment—dividends from his mining stock and a share in the tunnel revenues. This comes about in this way:

Every dollar paid in for stock in any one of the Big Five mining companies is immediately reinvested in the stock of the tunnels or mill. This money is employed for driving the tunnel to the mine, opening and developing it, and tunnel or mill stock at par, one share for every dollar so paid in, is issued to the mining company. Each mining company thus becomes an owner in the tunnel, and its share in the revenue goes out as dividends to the owner of the mining stock. To illustrate this: Should the Timberline Company, whose mines will be developed through the main-line of the Adit Tunnel, invest \$100,000 in this work, that company will own 100,000 shares of the Tunnel stock, and will be entitled to its proportion of the total revenue. In the same way it is arranged that the Timberline shall invest a certain amount in the Sunset Tunnel Railway Company—a project which will open the Timberline mine to a much greater depth than the Adit Tunnel will reach—and it will share in the revenue of that enterprise to the extent of its investment. It is intended that in the same way a portion of the money received from the sale of Timberline stock will be reinvested in the Dew Drop Mill Company, giving to this company a part ownership in the mill and a share in its revenue also. This makes for the investor in the stock of the Timberline Mines Company a four-fold source of revenue—from the mine itself, from the Adit Tunnel, from the Sunset Tunnel and the Dew Drop Mill—and all this from a single investment.

It is in this connection that the property owned by the Timberline company gets its greatest value. It lies far up on the mountain. The grade of the ore is low—what is known as mill dirt, or concentrating ore. While they are big properties, big ore and have always been held in high esteem by miners and their owners, yet the real value of these properties have been given them by the Big Five stockholders—their real value lies in the fact that the ores can be opened and taken out through the Adit Tunnel, and trammed to the Dew Drop Mill at its mouth, for treatment—the whole thing done at the least possible cost, a cost hardly more than ten per cent. of the value of the product. To have undertaken to work them from the surface through a shaft, hoist the ore, hoist the water, haul the ore down the mountain, and the timber and supplies up, would have been so great an expense, that it is questionable if the profits would equal the cost. But under the present method and plan, operating through the Adit and Sunset tunnels, these properties become par excellence, by

far the largest, and we feel confident, the most profitable properties ever opened up in the Ward district.

DEVELOPMENT REQUIRED.

The present breast of the Adit Tunnel is about 2,600 feet from the end of the Diana—the east end of the Timberline property. This distance the tunnel must be driven to reach Timberline ground, which added to the length of the Timberline ground (6,000 feet) makes a total of 8,600 feet to be driven. When the Timberline ground is opened up 6,000 feet in length the amount of ore that will be available will be so much in advance of what the present capacities of the Dew Drop Mill will be able to handle, that without a doubt it will be necessary to double the present milling capacity. All these requirements—mill enlargements and tunnel drive—should really not be considered an expenditure for development purposes, but an investment, and a thoroughly good investment too, which will return profits to stockholders for every dollar put up. \$406,000 is already pledged to the enterprise, and it follows that an investment now made in the stock of the company not only insures itself, but adds certainty to the fact that the Timberline mines will be opened as planned.

THE CAPITAL STOCK—HOW APPROPRIATED.

The stock of the Timberline is divided into 3,000,000 shares. Of this amount 900,000 shares go to the Big Five Grub Stake Pool owners in full payment for the property. 300,000 shares, that is 10 per cent. of the whole, is set apart as expense stock, to be sold and the proceeds used to cover all expense of organization, advertising, office expense and everything incidental to the business of the company. The balance (1,800,000 shares) is set apart to be sold and the proceeds re-invested—applied to the opening of the mines and bringing them to a high state of production.

HOW WE GET THE MONEY.—As our co-operative plan considers only the wage earners of America, our method of raising the necessary money puts shares in the Big Five easily within his reach. He is asked to come into the enterprise as a co-worker. He buys, say 5,000 shares in the Timberline (the ideal amount.) He does not pay for this at the time of his subscription. He pays only a small part cash, and thereafter, from month to month, as the work goes on, pays his share on account—and yet all this time is practically owner of 5,000 shares, and entitled to all privileges and dividends. Should he at any time be unable to keep up his monthly payments, he loses nothing, for he receives stock in even hundred shares to the amount paid for. This simple arrangement makes it possible for any man to be an owner and co-worker in the Big Five, and hundreds of people everywhere have taken advantage of it.

HOW WE SPEND THE MONEY. Every dollar received from the sale of stock is used at the mines—paid to the miner. Our policy is to spend every dollar received and push the work forward each month as far as the money of that month

will carry us, and not one foot further. If the income from stock is \$3,000, that amount is expended. The Big Five management contracts no debts. The organization of the Timberline means that the monthly income will be much increased, and by just that much and no more will the amount of work done be increased. This is the settled policy.

CONDUCT OF THE BUSINESS.—All work at the mines is under the immediate personal direction of a resident manager, William P. Daniels, who is also president of the different companies composing the Big Five. The personnel of the different companies is practically the same, and there are no complications or clash of interests. All work for all the mines has a common center—the Adit Tunnel, and the Dew Drop Mill and power plant at the mouth of the tunnel.

Records of all transactions, the business of selling the stock and keeping a record of the same; collecting the money, crediting and banking it, is carried on under the immediate direction of Secretary Merrill in the Denver office. A perfect record of every check and draft received is made. Every cent is deposited in a bank and kept in a perfect system of book-keeping, the necessary safes, and every facility for the safe conduct of the financial side of the business is here established. The records are regularly examined by expert accountants. These records and books are always open for the inspection of any stockholder or prospective investor.

COST.—The cost of opening the Timberline through the main line of the Adit Tunnel will be the actual cost of driving the tunnel 2,600 feet through the Adit ground, and 6,000 feet in the company's own ground. A cost for timbering must be added to this. The cost of the drive, including timbers and track is about \$30 per foot.

TIME.—The present rate of progress is about 120 feet a month. With the added money which the Timberline will bring to this work, the rate will be increased. In any case, the Timberline ground will be reached within thirty months from April 1st, 1900.

THE RAILWAY. A railroad is now completed and in operation to the camp and a switch from the main line lets the cars down directly to the mouth of the Adit Tunnel. This dispenses with the use of teams and makes the handling of freight and ore a matter simple, direct and cheap. This feature—the railroad—is a development that has followed in the wake of the Big Five within the past year and has added one-half to the value of the Big Five enterprise and doubled the profits.

REPORTS. We publish full financial reports of the Timberline Company in the Mining World. The subscription price of the World is paid for every stockholder.

ON REQUEST.—On request, we send a Big Five book, giving a photograph and the names of those who are the directors of the different companies, together with a statement concerning the organization and capitalization of each

of the different companies and their relation to each other. We also furnish other books, photographs of the interior and exterior of the properties and samples of ore.

DIVIDENDS.—The opening and equipping of the Timberline mine is provided for from the sale of treasury stock. The returns on all ore mined comes back to the stockholders as dividends.

And one word about the ore that we send out: It does not show any gold. It is what is known in the East as iron pyrites. It is sulphide of iron and sulphide of copper. All the gold in Ward Camp is contained in a matrix of sulphide of iron and sulphide of copper, especially adapted for smelting in the Pyritic smelter. Don't expect to see gold when we send you a sample of ore, for you cannot do it.

PRICES.—The subscription blank gives the price and terms for the Timberline stock. Fill up one of these blanks and send in the amount of the first payment. Upon receipt of the same we will issue a certificate to you; place it in an envelop with your name and address upon it, and there will also be a memorandum on the envelope, showing the date and amount of each of the deferred payments. We then credit

you on the journal for the amount paid in and charge you for the certificate. As each of the payments come in, they will be credited on the books and on your envelope.

COME AND SEE US.—Once each year the directors and many of the stockholders meet at the mines for an inspection of the mines, and at Denver for the transaction of the annual business. At such times, second week in September, it is desirable to see here as many of those interested as possible. But at any time stockholders and prospective investors are welcome. At the mines everything is open for inspection. Acceptable entertainment, such as the gulch can furnish, is yours. We want every man who has a share of stock in the Big Five companies, and strangers who may come into the Timberline to come here, when they can, and see the character, extent and value of the work done under the direction of the Big Five management. The annual meeting of the companies always occurs during the week commencing with the first Monday in September.

TIMBERLINE.

Denver, Colo., April 1, 1900.





SUNSET AND THE REGION OF THE BIG TUNNEL—GENERAL VIEW.

If you want to know the reason why others can't give you as good stock as Timberline, or as good an opportunity as this book offers you, we answer as did the man who was asked why the Amazon river was not used for water power, and replied: "Why, damn it, they can't."

Sunset Tunnel Railway.

Its Scope and Object.

THE POLICY of expansion which the Big Five has consistently followed has led within the last year to the consideration and final adoption of a project which in boldness of outline equals, possibly exceeds anything ever yet undertaken in the work of gold mining. Clearly seeing that the Adit tunnel system, as projected, would meet the first requirements of Ward district, it was equally clear that the time would come when the great veins opened by that system would demand a greater opening, one that would reach the foundations of these mineral deposits, and make their gold accessible for all time. The geology of the district, carefully studied, leaves no room for doubt that the lower measures of this region is an inexhaustible treasure vault. A strip of country, nearly four miles wide, lying between Four Mile creek and the St. Vrain, close up to the main range, is one great eruptive area, regularly coursed east and west by wide porphyry dikes, along which innumerable ore veins crop at the surface. The mineral-bearing character of these dikes is well known and universally recognized, and their unusual strength and extent in this region clearly indicate that the attendant ore veins are of equal strength and practically inexhaustible in depth.

These considerations—the number and permanent character of the veins, and the future need of still deeper and more extensive development than the Adit tunnel system could give—has brought into existence this greater project, the Sunset Tunnel Railway. As stated above, the course of the ore veins and dykes is east and west, while the line of this great tunnel is northerly and will in its course cut every vein in the district, known or unknown. Of the known veins there are nearly 100 now recorded, many of which have had years of production, while both the experience of the district and its geological character indicate that an equal number of blind or unknown veins will be opened. To properly appreciate its importance and value it is necessary to keep these facts in mind—it is necessary to try to grasp the amazing possibilities of a project that proposes to open more than 150 veins of ore to a maximum depth of 3,000 feet. What the Adit system is doing for the upper country, the Sunset tunnel will do for the lower region, bringing to a common focus the entire mineral wealth of the district at the least cost and the largest revenue. What this revenue may become will be limited only by the working capacity of the tunnel and the milling facilities for handling. Such an enterprise in such a country should handle 5,000 to 10,000 tons of ore a day.

As projected, the direct or main line of the Sunset tunnel is 18,480 feet, 3.5 miles. In this distance it gains a vertical depth beneath the collar of the old N1 Wot shaft above the town of Ward of 1,810 feet. Extended due north its vertical depth will exceed 2,000 feet. As will be seen on the large color map, this main line picks up the Dew Drop lead at or near the mouth of the Adit tunnel,

1,200 vertical feet below that level. A branch extended westerly 8,000 feet on the course of the vein from that point will, in that distance, reach a depth of 3,000 feet beneath what is known as the Tempest shaft on the Timberline ground. Of the region through which the line passes surveys have been made and elevations determined, as shown in the accompanying plat and profile. As will be seen from the profile, the tunnel enters the mountain from Four Mile canon, near Sunset camp. In the first 2,000 feet of its course it gains a depth of 1,200 feet and cuts five known veins. Thence through a somewhat flat country, where more than

district, this is by no means its limitations. Indeed, in view of its wider possible scope, the mining feature might be considered secondary. Northern Colorado, cut off by inaccessible mountains, is itself a vast undeveloped empire, rich in mineral, grazing and agricultural lands. In extent this region is equal to the combined area of Scotland and Wales. To reach it the great trunk lines of the plains have made many attempts, but these mountains have thus far proved an impassable barrier. The Colorado & Northwestern Railroad Company, a new and ambitious corporation, have already built from the plains, and are stretching their plans for a final leap over the range into this waiting



SUNSET, THE FUTURE CHIEF CENTER OF THE BIG FIVE.

a dozen known veins exist, it passes beneath Left Hand creek, on beneath the shoulder of Grassy mountain, California gulch and into the higher regions of the Ni Wot and Timberline. This great bore will be constructed on a one-quarter of one per cent. grade, three inches to 100 feet; be 8x8½ feet in the clear and have a two-foot covered waterway beneath the tracks. The tracks will be heavy railway steel, twenty-four inch gauge, and a fifth rail can be laid to admit the cars of the Colorado & Northwestern, and the ore be thus loaded from the chutes directly to the train.

While the initial form of this project contemplates opening a passage into the heart of the mineral of Ward

paradise for capital. Their line at the present time passes directly before the mouth of the Sunset tunnel. To understand the situation it is necessary to state that the railroad ascends the canon from the plains to this point, Sunset, a simple matter. From here the ascent of the hills begins, by no means a simple matter, and it is doubtful if when the higher points are reached that a railroad can be built, or if built, can ever be successfully operated. But, could this line find a passage through the mountains instead of over them, it would solve the problem and this great new empire would be opened. The Sunset tunnel offers a solution of the problem—not a simple one—but still the only solution the situation can ever have. Extended nine miles

beyond its present projected course, a total length of 12.5 miles, and the trains of the Northwestern would glide under the great mountain barrier, out into the rich plains beyond. Thence onward this line would be the sole master of a new empire. In view of such a possibility, the Sunset tunnel will be built with an eye single to ultimately controlling the railroad traffic of northern Colorado.

An examination of the map shows all Big Five property in colors. About 600 acres of this property lies directly over the course of the main line at the north end, and the branch following the Dew Drop vein to the Timberline. To the south there is an interval of a mile, and here are eighteen unpatented claims, covering the main line toward the south end. Further on, at the tunnel mouth, lies a twenty-acre placer. This also is the property of the Big Five, and secures to the enterprise valuable dumping ground, machinery building sites and valuable water rights. This is patented ground, which, taken together with all other territory owned, makes a total of 820 acres. The Big Five therefore controls the situation and is in a position to dictate terms. Lest, however, that this be not understood, it is proper to add that the Sunset Tunnel Railway Company will be chartered as a railroad corporation, having all the rights accorded such corporations by statute; the right to condemn a right of way, and pass through or over any ground as a common carrier. So that notwithstanding the fact that not all the country through which this big tunnel line passes is the property of the Big Five, there can never be any obstacle to its progress on a question of rights. In addition to this, all outside mines opened by the tunnel can be made to pay tribute for drainage, traffic, etc., which in the aggregate will become a source of large revenue.

Mention has been made of valuable water rights. It is a part of the Sunset tunnel project to secure to itself the valuable water power at the head of Four Mile canon, within a few rods of the mouth of the tunnel. The water at this point descends into the canon with a fall of 700 feet, in a distance of one mile. The water supply will be supplemented by ditches from the lakes above, a mile of steel pipe put in and an electric power plant of 300-horse power established at the tunnel mouth.

The opportunities which this situation offers for the establishment of such a plant are unsurpassed anywhere in the state. Sunset is an ideal spot. It is like a summer garden deep set in the shelter of surrounding hills. Neither winds nor snows can ever enter here. The sun shines here all the year round. It is 7,685 feet above sea level, and nearly 2,000 feet lower than Ward. It is an open, level basin nearly a quarter-mile wide and a mile in length. Here a small camp, and the depot and trackage system of the Colorado & Northwestern are already established. This entire basin—an old placer—is now the property of through the main range. As the dump spreads out, on its solid surface the power plant will be established. Here, too, will be set up a reduction plant for treating all ore delivered through the tunnel. A plant, modern and complete in every detail, equal to handling 1,000 to 5,000 tons of ore a day, will be built here, and will make this point one of the greatest milling centers in the state. To bring into existence a power plant and reduction works of such an extent will require much time and money, but such and so

favorable are all conditions that by the time the great bore reaches the heart of Ward district this feature of the project is certain to take shape.

Passing to the question of cost and the money involved in so great an undertaking, here are the estimates, and will serve our present purpose. The experience of the company in driving the Adit tunnel furnishes a basis of cost for this larger enterprise. The greater portion of this drive will be cross country, and experience has shown that the Sunset Tunnel Railway Company, or will become such immediately on organization. Over this basin the great dumps of the tunnel will spread out as the work advances. As the tunnel mouth is fifty feet above the general level there is here abundant dump room for the drive made clear such a drive is more expensive than a drive of equal distance on the vein. To drive such a tunnel on the vein, with such cheap power as here provided, \$20 a foot will cover all expense. On a cross drive of the same proportions one-half should be added, or \$30 a foot. On this basis the total cost of a drive across country 18,480 feet, the length of the main line, will be \$554,400. To this should be added \$60,000 for power plant and perfecting water power; \$50,000 for the necessary upraises to surface; \$10,000 for car and electric motor equipment; \$100,000 for the necessary ore reduction plant at the mouth of the tunnel, making the total cost of this undertaking complete \$774,400.

Such a work will require five years to perfect. With abundant capital and the use of the most improved and powerful machinery this time limit is conservative. But it will not be necessary to put such capital into the undertaking directly. It is but the higher perfection of the Adit tunnel system now well forward. With its hand upon this productive work, receiving from it a big, substantial revenue, the Sunset tunnel may go forward in easy stages, ready to come into use many years before this upper ground is exhausted.

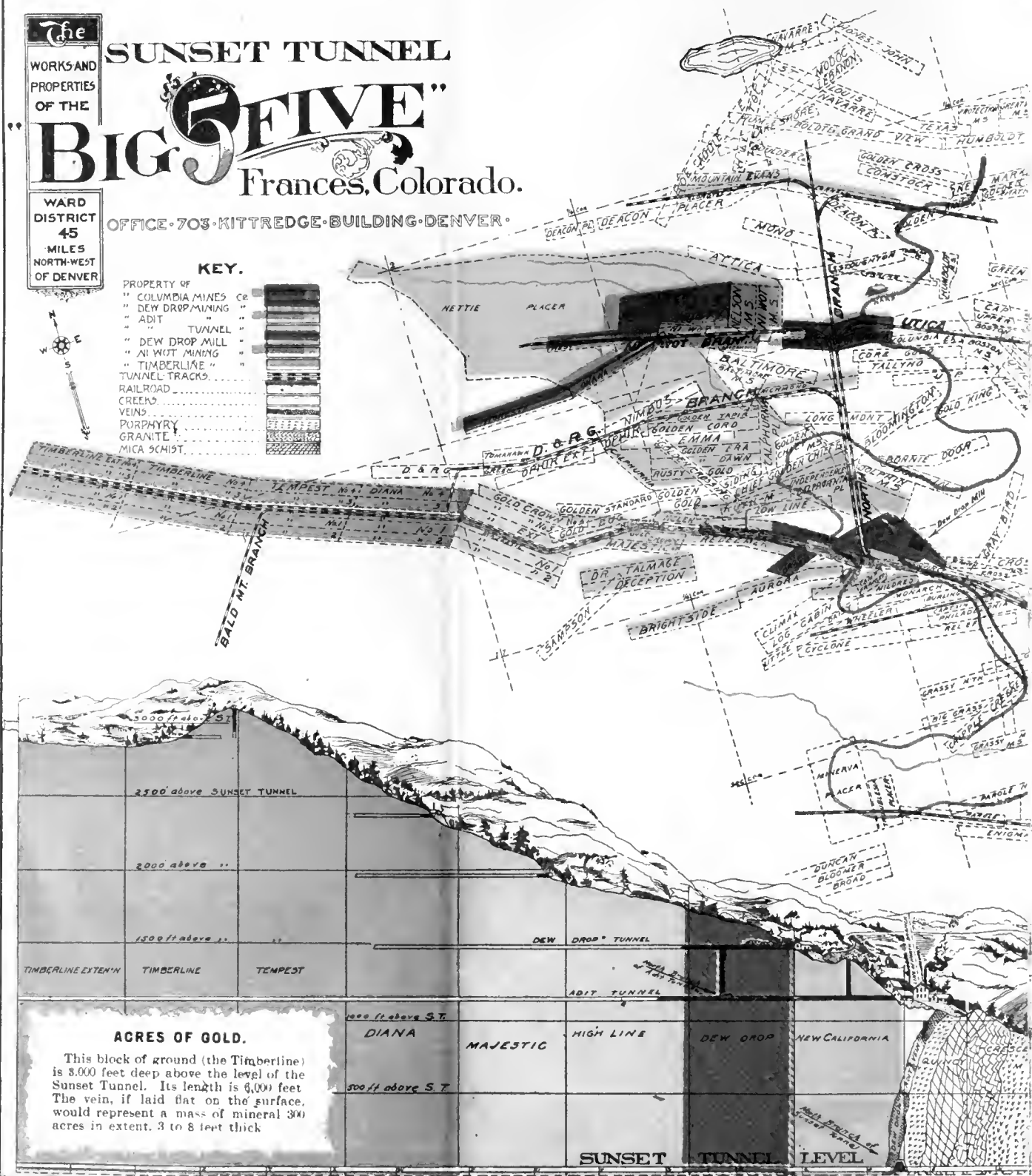
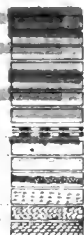
So brief an outline of so great a project serves a purpose, but fails to give more than a vague idea of its extent and value. The investing public are invited to give the undertaking its countenance and support, and lest in the minds of many there may exist a reasonable doubt as to the value of such an undertaking it will serve a purpose to call attention for a moment to like enterprises elsewhere. Mining by great tunnels driven into the hills, though comparatively new to the gold fields of Colorado, is as old as man's search for gold. In Cornwall they have mined for 3,000 years, and the great Redruth tunnel, thirty miles in extent, has made this possible not only in the past but for hundreds of years to come. For more than eight centuries the Hartz mountains of Germany have given up their treasures through miles of tunnels; the same is true in Hungary, Spain and elsewhere, proving their value through centuries of operation. Nor need we go so far from home to establish the fact that a mining region thus opened becomes the greatest and most substantial source of production that has ever been employed. In Colorado the Revenue tunnel in the San Juan has already proved this, opening to great depth a single vein, where a thousand men find employment, sending out more ore at less cost every day than any other twenty mines in the region. But of modern examples the great Sutro tunnel of the Comstock has in this connection the highest value; for by a strange coincidence this

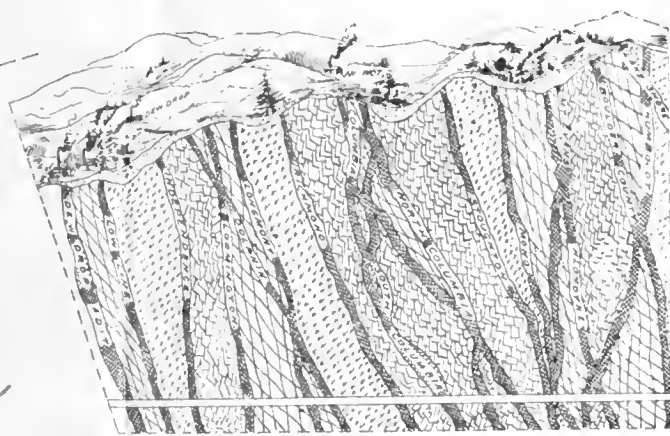
WORLD AND
 PROPERTIES
 OF THE
 "BIG 5 FIVE"
 Frances, Colorado.

OFFICE-703-KITTREDGE-BUILDING-DENVER.

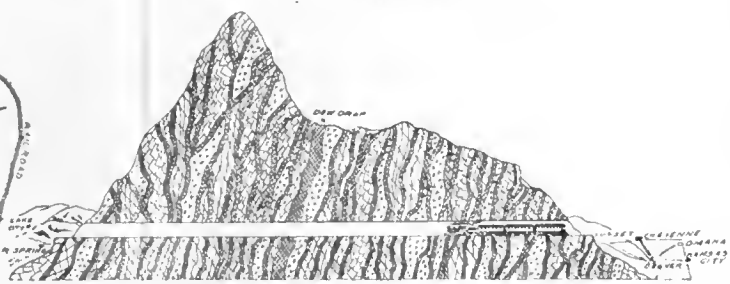
PROPERTY OF _____

" COLUMBIA MINES
" DEW DROP MINING
" ADIT
" TUNNEL
" DEW DROP MILL
" AIR WATT MINING
" TIMBERLINE "
TUNNEL TRACKS.
RAILROAD
CREEKS
VEINS
PORPHYRY
GRANITE
MICA SCHIST

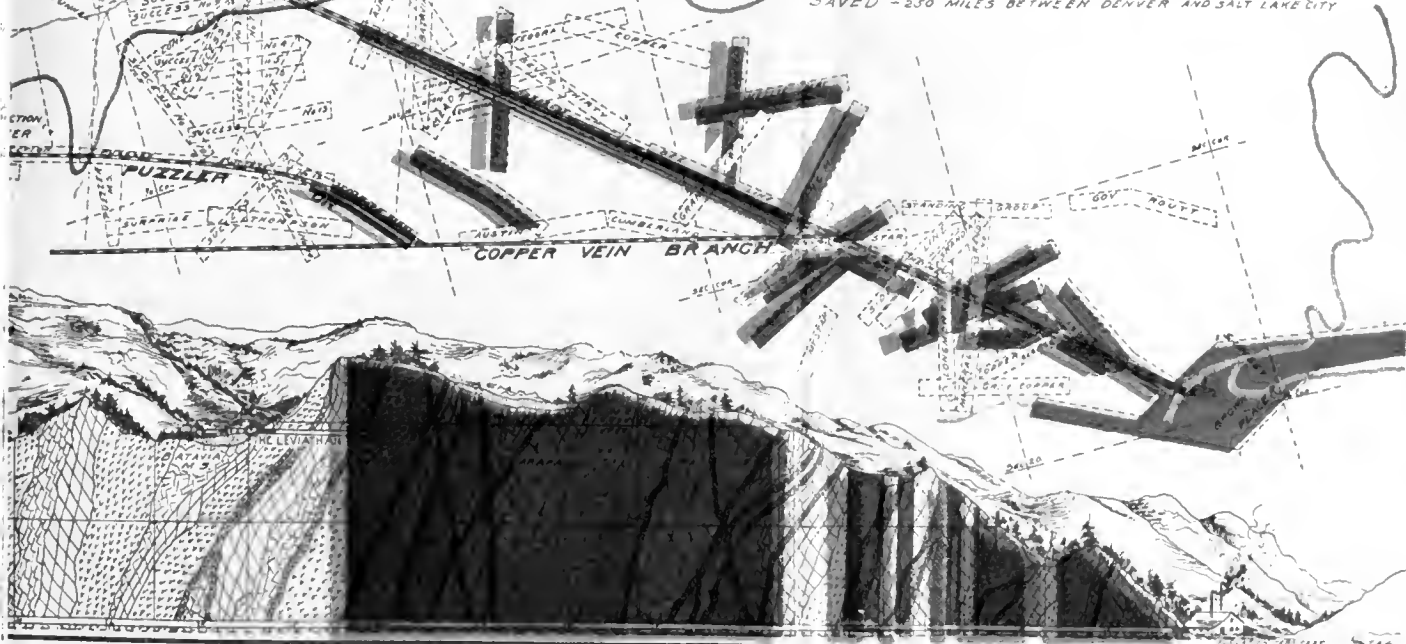




CROSS SECTION OF SUNSET TUNNEL FROM DEW DROP TO COLUMBIA AND HUMBOLDT VEINS NORTH BRANCH

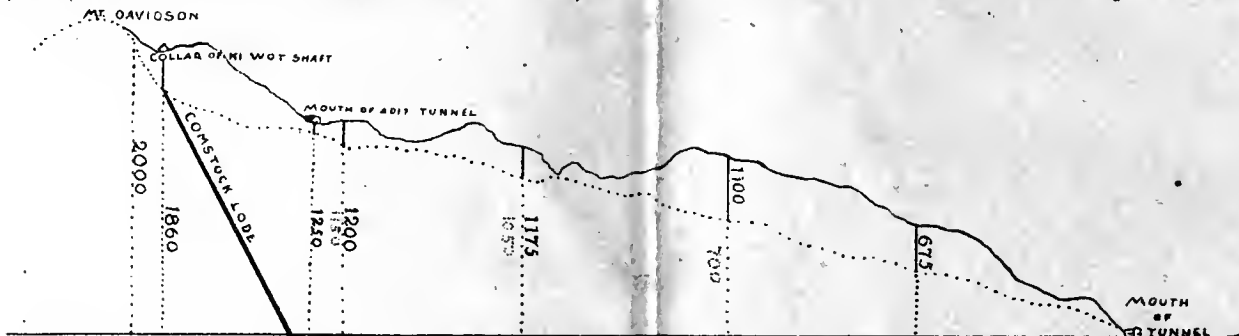


SUNSET TUNNEL STRAIGHT THROUGH THE ROCKY MOUNTAIN RANGE SAVED - 250 MILES BETWEEN DENVER AND SALT LAKE CITY



great enterprises has many features in common with the Sunset project.

That this may be better understood, we give here a simple profile of the Sutro tunnel, showing its length and depth at the point of intersection with the Comstock lode. Upon the same base is given a profile of the Sunset tunnel. By a remarkable coincidence the distance from the Carson river to point of intersection with the lode, 18,500 feet, is exactly the distance from Sunset to a point beneath the collar of the Ni Wot shaft at Ward. The upper contour line shows the surface of the country from Sunset to the Ni Wot, the lower dotted line the contour from the Carson river to the top of Davidson mountain beyond the Comstock. It will be noted that the Sunset tunnel has the greatest depth at every point. The Sutro cuts the Comstock 1,600 feet; the Sunset cuts the Ni Wot 1,860 feet, and below the Adit level 1,200 feet. The Sutro is a crosscut tunnel, and cut but a single important lead, the Brunswick, in all its course before reaching the Comstock. Like it the Sunset is a cross-cut, but unlike it, will cut over 100 important veins, before it drives into the bonanza ore of the old Ni Wot. It took ten years to drive the main line of the Sutro; the Sunset will do the same in five—possibly three, if time be made of the essence of the contract. It cost \$3,500,000—\$175 a foot—to drive the main line of the Sutro;



This cut shows the relative length and depth reached by the Sutro and Sunset tunnels. The base line is common to both. The upper or continuous line is the surface line of the Sunset tunnel from Sunset to Ward. The dotted line immediately below shows the surface from the Carson River to Davidson Mountain.

\$30 a foot, or \$555,000, will drive the Sunset a like distance.

Acting for the stockholders in '87, Theodore Sutro said: "The average gross income of the Sutro tunnel for the past three years, ending March, 1887, is \$204,775.59 per annum. Deducting from this the expense, the total net income for these three years is \$353,780.70, or \$117,926.90 per year."

When it is considered that up to this time but ten of the Comstock shafts had been connected, that not one-tenth of its earning capacity had been reached, there is something fascinating in its future earning capacity. Of this he says: "Taking as a basis of calculation the work of the past two years, and the natural increase in production, the net income for the year 1888 will exceed \$300,000—an increase of 100 per cent. in a single year." Carried forward but a short time at such a rate, a net annual income of \$1,000,000 would be easily reached.

In this connection the chiefest interest is that these figures furnish us a basis of comparison for measuring the possible future of the Sunset tunnel. Sutro's figures elsewhere show that the cost of operations approximates 50 per cent. of the gross earnings. As the net earnings for 1888 were estimated at \$300,000, and the charge per ton was \$2, the gross earnings would be \$600,000, showing a total tonnage capacity of 300,000, or approximately 1,000

tons of ore a day; raised to a net annual income of \$1,000,000, the average daily tonnage must rise to 3,000.

So many and striking are the features in common between the two—the Sutro and the Sunset tunnels—that an examination of these figures will serve a purpose. The tunnels are practically the same in length; in depth they reach the same distance, the advantage being slightly in favor of the Sunset. In trackage capacity they are the same—double tracked, and easily equal to handling 3,000 tons of ore a day. At a charge of \$1—one-half the rate made by the Sutro—the annual net income of the Sunset will exceed \$500,000. As the estimated cost of the undertaking is but that amount (\$500,000), as against \$5,000,000 for the Sutro, the Sunset at once appears as a most alluring investment. Nothing greater, we think, has ever been offered.

But the probabilities of such an income should be carefully examined and the grounds for thinking this not only possible but probable made evident. Starting from the tunnel mouth at Sunset, the hill rises very rapidly—in a distance of 2,000 feet rising over 1,000 feet. In that short distance five known veins will be cut at an average depth of 800 feet. Such are the conditions that these can be made immediately productive, and the tunnel be returning a revenue in a few months after its inception. As the line

advances along the course, little added depth is gained for nearly a mile, but in that distance more than thirty veins will be cut. Each of these opened and made ready for mining may easily produce fifty tons a day, or a total for the thirty veins of 1,500 tons—one-half of the rated tonnage of the Sutro. It might be questioned if this were possible. In answer to this, we would say that in the experience of this region there is not a sulphide vein that, cut to that depth, may not easily produce that amount of ore for an indefinite time. There is not a single operating mine in Ward to-day that, working through a shaft, cannot easily produce that amount of ore. How much more readily, then, may not such veins give a like production working through a tunnel.

In the first mile of the tunnel's length these thirty veins furnish a daily tonnage of 1,500. Pushed another mile, an equal number will be cut. In two miles' length the tunnel will have reached 3,000 tons—the highest tonnage rate given to the Sutro. The tunnel will not up to that time have reached the rich mineral center of the district—the Adit-Dew Drop mines, the Ni Wot, Columbia and Utica. It is here depths of 2,000 feet are reached, on ore bodies known to be big and inexhaustible. If the first two miles of the tunnel drive may be safely rated at 3,000 tons, the

third and last mile, tapping this rich center at such a depth will more than double this. Six thousand tons of ore will yield a revenue of \$3,000 a day above all cost, exceeding a net annual income of \$900,000.

Just this prospect and nothing less lies within the reach of this great enterprise. Cast into figures, it seems too great to be ever realized. But the men who have the nerve and energy—the men who are willing to back so great a venture with their money—will find in a few short years

passage the waters of the western slope can be made to flow—rivers and lakes innumerable—and the barren plains of Kansas, Nebraska and Colorado be made the future garden of the world.

Mining, railroad and irrigation—the three great wealth producers of the world—lie wrapped in this great project. Modern methods, modern enterprise and modern courage dares venture such things now, for man has come to learn that along such lines lies the road to fortune.



SUNSET TUNNEL ENTRANCE, SHOWING PRESENT POWER HOUSE.

that they have opened for themselves and for posterity an avenue of unbounded wealth.

The Sunset Tunnel Railway, as projected, has most excellent precedents, old and new. Greater than any of these in its possibilities of revenue, with the reduced cost of mining and the improved machinery, it can be built for one-fifth the cost in one-half the time. Valuable as it is certain to become as a mining tunnel, its value does not stop here. As a future passage for some great transcontinental railroad, giving a direct course to Salt Lake and the coast—lessening the distance by nearly 300 miles—through which the commerce of the great West will pour, no man can adequately estimate its value. On the plains below there are waiting millions of acres. Through this

The revenue for driving the Sunset tunnel is provided for by a special provision of the Columbia Mines Company and Timberline Mines Company—900,000 shares in each company. This stock will provide funds. This is sufficient to drive the tunnel, at thirty dollars per foot, about 19,000 feet; bringing it into the Timberline ground on the west, and the Mt. Wot and Columbia properties on the north. The most conservative estimate on the profits of this investment is from 25 to 100 per cent. a year. A very little figuring and calculation will show that the draining of the different mines reached and transportation of the ore from them will give you an annual dividend on this investment of 25 to 50 per cent., making it one of the best investments that the closing year of the century offers.

Every man has at least one golden opportunity, and life is full of lesser ones. Are you aware that now is your opportunity and that this is a message from the Big Five to you?

Camp Frances,

The Future Center of District.

SWEPT by fire, the ancient center of the district, Ward, is now a ruin. On the old historic spot fate has ever laid a heavy hand. Under conditions that would long ago have crushed a less varile community, the old camp has struggled on. Ever hopeful of the succeeding years, she has met disappointment with unswerving courage. Confident of the riches that lay buried in her hills, men said, "We will win out yet," and so girding up each his loins, they builded their houses and anchored each his hope. Ruin it may be, but at best it is only temporary ruin, for the hope is well anchored, and Ward will rise again with renewed strength from its ashes.

As a business and producing center its ascendancy is, however, threatened. This is putting a mild construction on the present and growing conditons. Across the mountain, to the south, hardly more than half a mlie, lies Frances, the home of the Big Five. Measured by years it is a mere child, compared with the older camp—hardly more than a grandchild. But it is a vigorous youngster, and in its four years of life has shown a vigor that promises well for its future. As a mining camp it is a model community. Here are some thirty families, located in substantial cabins, a school house, two hotels, general store, post-office, railway and telegraph station, all centered about the extensive company buildings of the Big Five. As the land is practically all the property of the company, the life of the community is largely subject to the control of the company management. It is thus possible to keep out every undesirable or corrupting influence, so that the Frances of to-day presents the exceptional instance of a mining camp of nearly 200 people without a saloon, gambling house or dance hall within its limits. The result is just what it always is—a model community, devoted wholly to the business of right living, with simple pleasures and uninterrupted industry.

Wholesomely founded, there is behind it that which makes for stability—an established, extensive business. In the company works a force of sixty men are steadily em-

WARD—BEFORE THE FIRE.



ployed, and among them nearly \$4,000 are distributed every thirty days, and this money they get with the promptness and precision of clockwork—the tenth of the month has always found the Big Five able and willing to meet every obligation. In the camp, therefore, there is among the men no cause for debt. The result is that Frances is steadily drawing to itself the best brawn, brain and character of the district.

But it has done more than this. It has drawn to itself the best mines of the region. Not content with its local strength, it has reached out to the older camp and has drawn from it the mines themselves—the big mines—that have ever been the hope and strength of the older community. With its far extending tunnel system, Frances has reached out to the Ni Wot and Columbia; in the coming years will reach out still farther, and the result will be that the center of business and production will shift to the

mouth of the Adit tunnel, around which Frances is now building.

This is inevitable. The district itself feels and acknowledges it. The railway management acknowledges it. And when the period of production in the Big Five mines begin—when a thousand tons of ore come pouring through the tunnel mouth each day, from the Ni Wot, Columbia, Adit, Dew Drop and Timberline; when the great mill becomes the reduction plant it is planned to make it, piling up the virgin gold in thousands daily, then will be seen right here a new Ward, a new community, compared to which the palmiest days of the older camp could never equal.

Frances is certain. It has in it all the elements of strength and future importance. They builded better than they knew, who laid its corner stone; the hand that is shaping its destiny has no uncertain touch, and the future is secure.



WARD—AFTER THE FIRE.

PERSONAL OPINION

OF THE

Big Five and its Management.

Since the beginning of its work, the management of the Big Five has held open court, has invited every person interested to visit the mines and examine its business methods. There are no closed doors anywhere, no secrets. Many have taken us at our word and have made personal investigation. These are business and professional men from various states, men of unquestionable standing each in his own community, and the "personal opinions" given here fairly represent the views of all:

W. H. Smith writing from Des Moines, says:

"Having recently returned from a trip to the mines of the Big Five company, located at Frances, Colorado, and to their office in Denver, I wish to state that I have examined the property from A to Z, went over the entire ground at the mines afoot and also on horseback, and from one end of the tunnel to the other, and have examined the books at the office in Denver.

I find after a thorough examination the entire proposition in a most satisfactory condition.

The Ni Wot, in which I was most interested, I find they have taken out some very fine ore from one of the old shafts, and of which I secured some excellent specimens, which I am reliably informed will assay from \$50 to \$100.

I am entirely satisfied all is being done to push the tunnel to completion that could be. After talking with some of the oldest and best posted miners in that part of Colorado, I am more firmly convinced that the Ni Wot is the best proposition in the hills. I asked the question from these miners (they not being interested, nor did they know I was): What is the best proposition in the region? The universal answer was, "The Ni Wot or Columbia lode is the best one in the whole region."

I find the Adit tunnel progressing in a very satisfactory manner and the work in every particular first-class. The power house, machinery, and in fact everything connected with the Big Five is the best that can be had, and the entire work at the mines, under the excellent supervision of Mr. Daniels is conducted in a thoroughly economical and business-like manner.

I find all supplies, even down to a single screw, nut or bolt, must be accounted for to Mr. Daniels when taken from the supply room, so close does he watch these matters.

At the office in Denver I had the pleasure of meeting Mr. Merrill for the first time, who opened the books for my inspection, and which I can assure the stockholders of the Ni Wot, to be a most systematic system of bookkeeping. A better system could not be invented.

The department under Mr. Loftus' jurisdiction is thorough in every particular, and I can assure the stockholders of the Ni Wot, that under the careful management of Messrs. Merrill, Daniels and Loftus, that they need have no fear but that their interests will be looked after with the closest attention, and I would advise all Ni Wot, or any prospective stockholders to avail themselves of the most

liberal offer made by the Big Five company to visit the mines and see for themselves the magnitude of this enterprise."



Early in the spring H. A. True, of Summerville, spent several days in camp:

"I inspected the Big Five properties June 28th, 29th and 30th, and was very favorably impressed with the outlook. They certainly have an immense body of ore, and everything in the way of development work has been conducted upon a substantial foundation and in a way to make the actual work of mining possible at extremely low cost. The management appears to be capable and honest, and I have the utmost confidence in the officers.

In the natural course of events the Dew Drop would be the first to pay dividends as it is already opened up from end to end, and I should guess would be able to pay substantial dividends in from six to eight months if the directors should decide to mine the ore in sight.

I am personally only interested in the Ni Wot and Columbia and am very much pleased with the prospects for both. I examined the ore dumps with great care, and am convinced that the tunnel will cut the vein at such depth as to give a body of marvelous rich ore if indications amount to anything.

I failed to find anything during my visit that was not as represented in printed matter issued by the company. I will say finally, that I am highly pleased with my investment, and hope the companies will continue in the line of development marked out, rather than deviate for the sake of mining for a dividend. I am satisfied that the dividends are there and will come in due time and come to stay."



H. C. Lutz, of Wilkesbarre, Pa., was at the mines early in July. Writing to a friend, he says:

"I have been to see the great and only Big Five at Camp Frances. I am to-day one of its heaviest stockholders, thanks to you. Since you first recommended me to exchange stock in it, I have watched it as closely as possible at a distance, becoming interested in every proposition they offered, and now since I have seen the property for myself, I am more enthusiastic than ever. I am more than satisfied with my holdings, and have you to thank when the dividends begin coming in, which they will in due time without fail."

J. B. Swarthout, of Johnsonburg, Pa., was at the mines in July:

"I found things just as represented in the Mining World—even better than I was lead to expect by reading the paper. Any stockholder who can afford it ought to visit the mines. A visit would remove any doubts of any kind he or she might have. Just keep on and I will try and furnish my share of the funds to bring it to a success as soon as possible."



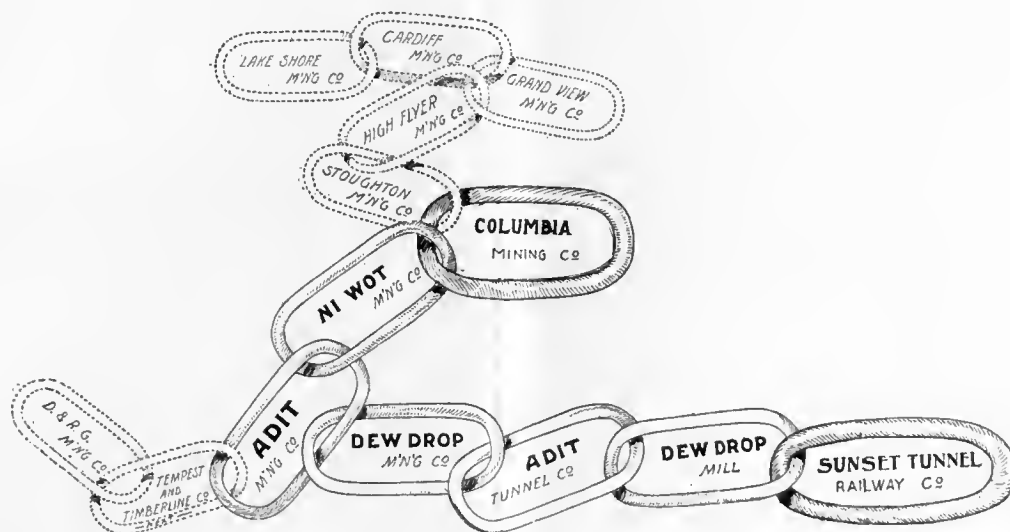
From Bennington, Vt., Dr. F. W. Goodall writes:

"I have put in six months close, hard study of the situation and believe in the combination. I cannot believe I am deceiving myself or mistaken, but you understand I am not an authority. I went all over the properties from Sunset to Ward, including Camp Frances. I believe there is a mineral belt there extending from east to west through which the Sunset tunnel will pass, cutting the veins at right angle its entire length. I saw evidences which I accept of several veins between Camp Frances and the Ni Wot, the last of the present mining companies to pay a dividend."

From Percy Mulholland, of Rochester, we have these words:

"It was my pleasure recently to meet Miss Killbourne, sister of our genial medical superintendent, and I really felt that I knew all about our mines, etc., for she was so very observant while visiting you that I was permitted to hear everything in detail from her trip, which she enjoyed immensely, and it was with a sad heart that she bld us all adieu to resume her work in New York. She told me she would cherish the most pleasant memories of her trip and of all the kind friends she met there at the mines and elsewhere. She would not, she said, have missed such a sight-seeing for any consideration. To sum up her remarks: "Everything about the mines is all right, and Mr. Daniels and Mr. Merrill are both the right men in the right place." We spent a whole evening besides at other intervals talking and looking at her samples. She was very proud of having taken them out with her own hands, and left me some."

I would like very much to visit you this fall, as you are going to have a big time, but my arrangements cannot so be made. Nevertheless, in every way I am with you and with all concerned and interested in the Big Five."



The Strength of a Chain

is not in its weight, but in the individual links that compose it. The Dew Drop, Adit, Ni Wot, Columbia and Timberline—these are the links composing the Big Five chain; strong in themselves, united, the chain they form cannot be equaled. United in this way, they become a concentrated force. They control and own nearly 600 acres in the heart of the richest gold mining district in the state. They have 12,000 feet of the great Dew Drop-Adit vein, 4,500 feet of the great Ni Wot-Columbia vein. They have already 11,000 feet, nearly two miles, of tunnels, levels and shafts; have over 300,000 tons of ore blocked out and ready for shipment; have the largest concentrating mill ever built in the district; employ a force of 60 men; will have 100 on the pay roll before the close of the year, and now everywhere recognized as one of the foremost gold mining ventures ever undertaken.

Answers to Questions That May Arise.

Q.—Why is an investment in the Timberline good and safe?

A.—Because the proposed Timberline Company will own a large portion of the very best and richest mineral territory in the heart of Ward Camp. Because the charter members secure their stock at half the actual investment when the mine is properly opened up. Because the Timberline gets the advantage of all the money that has been invested for the last four years; it gets advantage of 5,000 feet of tunnel already driven; it gets advantage of the power plant now in operation. Because it will never incur debt faster than the money paid in. Because it has no salaried officers or managers, except those who return value received by hard work every day. Every stockholder has a vote in the election of directors for every share owned by him as soon as he has made one payment. Fifty dollars down and \$30 per month will give you the ideal amount, 5,000 shares, in the Timberline Company, in forty payments.

Q.—Are there any extra or unknown assessments after the stock is paid for?

A.—There are none and there can be none. The stock is fully paid and non-assessable.

Q.—If I was certain that what you say is true, I would invest. How shall I know this?

A.—Come here and see for yourself. We will pay the necessary expenses of the trip if you take 10,000 shares of stock. A trip to Colorado in June will do you good, and we promise that you will see much to repay you. Or arrange a club among your friends to take a block of the stock and come here as their representative. If you are not in a position to do any of these things, write a letter to any reference here given or any person that has been at the mines.

Q.—If the money we pay is reinvested in the Dew Drop Mill, Adit Tunnel or Sunset Tunnel Railway, do we get stock in these companies issued to us, or how is it?

A.—The Mill and Tunnel Company stock is not issued to you. It is issued to the Timberline Mines Company and held in the treasury as an asset for your benefit. Dividends received by the Timberline Company from the Mill Company or from either of the tunnel companies will be paid out to you in proportion to the amount of stock you hold in the Timberline Company.

Q.—If I should take 5,000 shares of stock in the Timberline and later wish to sell, would our office assist me in placing the same?

A.—No. Our business is to sell the treasury stock of the company. But it has always been the policy of the Big Five to protect its stockholders. Should you buy stock in the Timberline beyond your ability to carry it, let us know about it—we will be very glad to help anyone. All we ask is that in the beginning everyone who buys will help push the sale of treasury stock, and those who do so can rely on our aid to a certainty. Any fair-minded man cannot fail to see that any other policy would be utterly demoralizing and injurious to the interests of all.

Q.—What about the Mill and Tunnel companies' stock? Why don't you sell the stock of these companies, and especially the stock of the Sunset Tunnel and Railway Company?

A.—We do sell the stock of the mill and of the tunnel companies; but it is chiefly sold to the mining companies. These companies thus form a wheel within a wheel. You buy an interest in the Adit Mining Company or in the Ni Wot Mining Company and you get an interest in the Adit or in the Ni Wot mine and in the Adit tunnel and the Dew Drop mill companies. If you buy stock in the Timberline Company, you get an interest in the Timberline mine, in the Dew Drop Mill Company, the Adit tunnel system and the Sunset Tunnel and Railway Co. This illustrates the re-investment feature we have been talking about everywhere.

Q.—If the company pays 1 per cent. dividend, will it be 1 per cent. of what we pay in for stock, or 1 per cent. on the par value?

A.—Dividends are always figured on the par value. One cent dividend on 5,000 shares would amount to \$50 a month. You pay in \$30 per month; and inside of three years you can reasonably expect to receive back \$50 per month; and this amount as stated above, may be largely increased in the years to come. This amounts to about 50 per cent. per year on the amount invested.

Q.—Suppose I fail to make payments for six or nine months, or more?

A.—Your stock is non-forfeitable and we have no fines. The subscription provides that if at any time you are unable or not inclined to continue payments, stock will be issued to you in even hundreds for the amount paid.

Q.—What do you estimate that the possible dividends may be?

A.—From half a cent to three cents a month. The source of these dividends is fourfold, as stated above.

Q.—How long may such dividends be expected to continue?

A.—With proper development and the ultimate extension of the Sunset tunnel through the range, there is no limit to the length of time that these dividends can be paid. With thorough and continuous development, the mines will not reach their greatest perfection for forty years; and during all that time, increasing dividends may be expected.

"A Good Beginning is a Thing Half Done."

You cannot expect to "strike it rich" if you do not make a start and invest in a gold mine. Your ship will never come in laden unless you launch it. Launch it to-day. Don't wait until to-morrow. Start it to-day on the ground floor. The small investors of to-day in a few years are the rich men.

REFERENCES:

**First National Bank, Boulder, Colo.
Col. Oran Perry, Indianapolis, Ind.
T. J. Powell, Brooklyn, N. Y.
Col. P. Motherill, Havana, Cuba.**

Any one who has lived in Colorado fifteen or twenty years ago, or who has recently been in Ward camp and examined the Adit-Dew Drop and Columbia vein.

**TIMBERLINE,
708 KITTREDGE BUILDING,
DENVER, COLO.**

"The mines are located in Ward mining district, one of the best in northern Colorado, and I consider them to-day under the management, among the best of the state of Colorado. The gentlemen in charge, Messrs. Merrill and Daniels, attend to the handling of the business in person. Their dealings through this bank have been most satisfactory indeed, and if Mr. Merrill should ask for \$10,000 on his own name he could get it. I regard them entirely responsible, good, safe men."
—Extract from a letter written by W. H. Allison, cashier First National Bank, Boulder, Colo.

An Estimate from Indiana

Indiana Agency of the Big Five
Indianapolis, Ind., Jan. 20, 1914
Editor of the Mining World:
We have been noticing for a few weeks
your advertisements of the proposed
mines company, and we are glad to
hear of the quantity of the
the real thing.

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 the Adit tunnel. I have alwa
 the Big Five enterprise through
 Referring to the estimate by Mr. C.
 W. Perkins of Cedar Rapids, and
 taking his number of tons, 5,100,000, as
 of one-third for barren spots, pinches,
 horses, etc., we would still have 3,400,
 000 tons.
 Then take your estimate, on page 27
 of the "Big Five" prospectus, \$70 per
 ton for smelting and allowing 5 per cent.
 or 3,230,000 tons milling and 95 per
 cent. for smelting and allowing 5 per cent.
 would have \$11,900,000 for smelting
 and \$17,141,100 for mill ore.
 Milling 200 tons per day, for 300
 working days per year; it would take
 thirty-seven years to work out, at a
 cost of \$600,721 per year, or 10 per
 cent. on a total capitalization of \$6,
 000,000. The value of the stock that had
 been placed at figures varying from
 \$100 to \$1,000 per share, and
 has any money at all, is
 certainly lost.

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On the ground floor price as soon as it is put on the market. The probability that the mill ore is more likely to be sold at \$25 per ton as the proposition is very true.

"The Big Five mines have been pushing work very rapidly all summer. They have put up a two-story steel building, new boilers and engines, and have put in the largest air compressor for mining purposes. In the state of Colorado. They have about 5,000 feet of tunnel and are still driving the main tunnel and N1 Wot crosscut. Both Mr. Blair (general manager of this company, and formerly general manager of the P. B. & E. R. R. of Pennsylvania,) and the writer consider Mr. Daniels the best business man in any mining camp along the line of this road." — Extract from a letter written by F. W. Hill, chief clerk Colorado & Northwestern R. R.

Glossary.

Definitions of Mining and Milling Terms.

ADIT—A level; a horizontal drift or passage from the surface into a mine.
AIR SHAFT—A shaft for ventilation.
AMALGAM—Gold or silver combined with quicksilver.
APEX—The top or highest point of a vein; croppings at the surface.
ARASTRA—A crude mill for grinding ore.
ASSAY—A chemical or fire test of mineral to determine quality or quantity; usually to determine gold and silver value.
ASSESSMENT—Percentage levied on the capital stock of a company; the annual labor required by law on mining claims.
BASE BULLION—Lead combined with other metals after smelting, cast in an ingot.
BATTERY—Generally applied to a set of five stamps.
BED ROCK—Solid rock underlying alluvial and other surface formations.
BLANKET VEIN—A flat or horizontal ore body.
BLIND LODE—A vein that does not show at the surface.
BLOSSOM ROCK—Detached rock or ore, scattered over the surface, indicating the presence of mineral veins.
BONANZA—Rich bodies of ore.
BREAST—The face of a tunnel or drift.
BULLION—Ingots of gold or silver ready for the mint.
BUTTON—The globule of metal resulting from an assay.
CAPPED—A vein is in the "cap" when it is much contracted, or disappears.
CAP-ROCK—The rock overlying the ore vein.
CHIMNEY—The richer parts in lodes as distinguished from poorer ones; rich deposits undefined by walls.
CHUTE OR SHOOT—A body of ore, usually of an elongated form, extending downward within a vein; a slide for ore or waste rock.
CLAIM—Space of ground located and worked under the law.
CLEAN-UP—Collecting the valuable product of a given period of operation in a stamp mill.
COLLAR—Top of shaft or winze.
CONCENTRATES—Mineral from which gangue and dirt have been removed.
CONTACT—Parallel bodies of two kinds of rock, such as lime and porphyry.
CONTACT VEIN—A vein between two dissimilar rock masses.
COPPER PLATES—Plates of copper coated with quicksilver, upon which the gold is caught as the crushed ore flows from the stamps.
CORD—A cord weighs about eight tons.
COUNTRY-ROCK—The rock on each side of a vein.
COURSE OF VEIN—Horizontal direction.
CREVICE—A fissure, split or crack; the pay streak is called "the crevice."
CRIBBING—The timbers used to secure the walls of a shaft or incline.
CROPPING-OUT—Mineral or mineral body rising to the surface.
CROSS-CUT—A level driven across the course of a vein.
DEPOSIT—Ore bodies not confined to a lode; undefined by wall limits.
DIP—Same as pitch; the vertical slope or pitch of a vein or mine.
DRIFT—A tunnel; a horizontal passage underground.

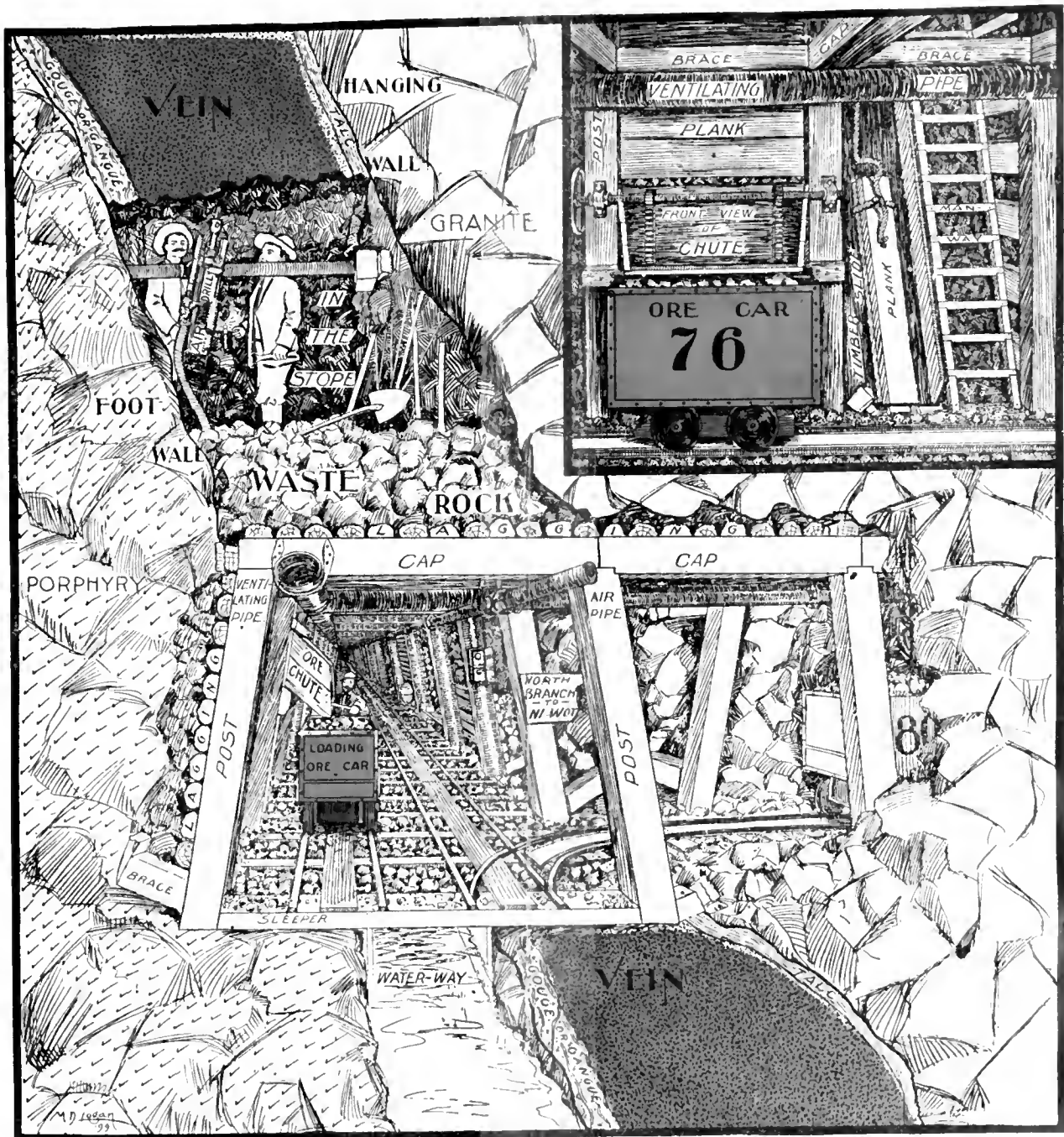
DUMP—A place of deposit for ore or refuse.
DYKE—A wall-like mass foreign to the general formation.
FAULT—The displacement of a stratum or vein.
FISSURE VEIN—A crack or cleft in the earth's crust filled with mineral matter.
FITCHURE—When a drill in operation binds or tightens in a crevice it is said to "fitchure."
FLOAT—Loose ore found on the surface detached from the vein.
FLUX—Substance used to promote the fusion of ores.
FOOT-WALL—The rock lying on the lower or under side of the vein is called the foot-wall.
FREE-GOLD—Gold uncombined with other substances.
FREE MILLING—Ores containing gold or silver that will separate from the gangue by simple methods.
GANGUE—Same as matrix; the substance immediately surrounding and associated with the mineral.
GASH-VEIN—A vein wide at the top and closing at a short depth.
GOUGE—A clay streak found alongside the vein.
HANGING WALL—The rock lying above or on the upper side of the vein.
HEADING—Same as breast; a vein of ore above the drift.
HITCH—A hole cut in the wall to hold timbers.
HORSE—A body of rock of same character as the wall-rock occurring in the course of the vein.
IN PLACE—A vein, or ore, in its original position.
JIG—A machine for concentrating mineral by means of water.
LAGGING—Split logs and poles used for lining the roof and sides of a drift or tunnel.
LATERAL—A passage driven from main line of tunnel.
LEDGE, LEAD OR LODE—A rock body differing from the country rock through which the mineral body courses.
LEVEL—A horizontal passage or drift into a mine from a shaft.
MATTE—A mass, chiefly of metallic sulphides, obtained in the fusion of ores.
MILLHOLE—A chute to pass ore through from stopes to levels.
MILL-RUN—A test of the value of a given quantity of ore.
MORTAR—Receptacle for ore beneath the stamps of a stamp mill.
MUCKER—A man who handles or removes ore or waste.
OPEN CUT—A surface working open to daylight.
ORES—Metals, free or mixed with its gangue and compounded with oxygen, sulphur, arsenic, etc.
OXIDATION—A chemical union with oxygen and a consequent displacement of other gasses like sulphur, etc.
PANNING—Separating gold from gangue or gravel by washing.
PAY—Profitable ore.
PAY STREAK—The rich streak in the vein.
PINCH—Contraction of the vein.
PLACER—Deposits of gold or other mineral found in particles in alluvium or diluvium.

POCKET—A rich spot in a vein or deposit.
PROSPECTING—Searching for mineral veins.
PULP—Finely pulverized ore.
PYRITES—Iron, copper or arsenical sulphides.
QUARTZ—Crystalline silica.
RESERVES—Mineral standing in mines between levels that will pay to extract.
RETORT—Gold or silver after separation from the quicksilver; gold combined with other metals.
ROYALTY—The percentage paid by lessees on the ore extracted.
SALTING—Placing foreign ore in the crevice of a vein for the purpose of deceiving.
SHAFT—A well-like passage into a mine.
SHIFT—A miner's work for a day.
SKIP—A bucket or box used to hoist material from a mine.
SLICKENSIDES—Smooth polished surface of walls, caused by trituration.
SLIMES—The finest of the crushed ore and gangue from the mills.
SMEETING—Reduction of ore in furnaces.
SPAR—Usually applied to the different lime formations.
SPIT—To light a fuse in such a way that miner may get away before explosion.
SPUR—A branch of a vein.
SQUARE SETS—A kind of timbering used in large spaces.
STAMP MILL—A mill used for crushing ores by means of stamps.
STOPE—The part of a vein above or below the drift from which the ore has been removed.
STOPING—Excavating the ore from the roof or floor of a drift.
STRATUM—A bed or layer.
STRIKE—Same as trend; the extension of a lode in a horizontal direction; the discovery of pay ore.
STRINGER—Same as feeder.
STULLS—A framework to support the rubbish when stoping.
SULPHIDES—Sulphur, with a metallic earthy or alkaline base.
SUMP—A well at the bottom of a shaft to collect water.
TAILINGS—The refuse left after washing ores containing metals not saved in the first treatment.
TRAM—To remove ore or waste in a car; an ore car.
TRAMWAY—Tracks in a tunnel or drift.
TUNNEL—A level driven on or across a vein.
TUNNEL MOUTH—Entrance to tunnel.
UPRAISE—A shaft or winze excavated from below.
VEIN—The pay or mineralized portion of a lode.
WALLS—The sides next to the lode or mineral matter.
WASH—Same as slide; surface matter that washes down from the hills and covers the bedrock.
WHIM—A machine for raising ore or refuse.
WINZE—An interior shaft sunk from one level to another.

List of abbreviations commonly employed in milling, smelting and assaying:

Ag. Silver.	Au. Gold.
Cu. Copper.	Fe. Iron.
Pb. Lead.	Si. Silicon.
Sio 2. Silica or Quartz.	
S. Sulphur.	Zn. Zinc.

A MINE INTERIOR—One of the Big Five.



Cross section in Adit Tunnel, showing junction of Ni Wot or North Branch with the Main Line.



A String to Your Money

THE money you pay in for stock in the Timberline Mines Company is simply on deposit, the same as in a bank, until you are satisfied. There is a string tied to every dollar. We accept your money and subscription to the stock with the distinct understanding that if you examine the mines, personally or by a representative, within three months from the date of your subscription, and are not satisfied, your money will be returned and your subscription canceled. This is the string tied to the money you send us.

The following are the facts upon which you are asked to join us :

The Timberline Mines Company owns twenty mining claims—about one hundred acres. Fifteen of them are surveyed for patent; five others will be surveyed during the present season. This ground is shown in brown on the accompanying colored map, and in black on the Adit Tunnel map.

The Timberline Mines Company is one of the Big Five.

The main line of the Adit Tunnel is now (April 1, 1900), 3,782 feet in, and the North Branch to the Ni Wot and Columbia mines is 1,738 feet in. The main line of this tunnel will enter the Timberline ground in a further distance of 2,600 feet, at a depth of 1,125 feet, reaching at the apex of the mountain a maximum depth of 1,850 feet. The Timberline Company owns 6,000 feet of the Dew Drop vein.

All money you pay for treasury stock will be reinvested in the Adit Tunnel, Dew Drop Mill and Sunset Tunnel, and you will share in all profits from milling and tramping of ore and waste for all time.

Not one dollar received for Timberline stock will be used in completing the North Branch to the Ni Wot and Columbia mines. This is amply provided for by these companies.

There will be no salary paid to any officers or directors of the Company.

The office expenses of the Big Five, of which the Timberline is a part, will be apportioned among the seven companies. The expense of sending out printed matter, incorporation of the company and paying stockholders' subscriptions to the Mining World, is met by the sale of a special block of stock. Not one cent will come from the treasury for these purposes.

The main line of the Adit Tunnel is now making a monthly progress of 120 feet along the vein toward the Timberline. This rate will be increased as much as possible.

We have opened in the Dew Drop and Adit ground on this vein already, approximately 300,000 tons of ore.

The Timberline mines are all paid for and titles perfect. The policy of the Big Five is, and always will be, to never get in debt.

Upon the foregoing representations, we ask you to join us and take as large a block of Timberline stock as possible, in accordance with the terms of the subscription blank.

COME AND SEE THE MINES.

We prefer that every man, before he lets go his hard earned money, should satisfy himself by a personal examination of the mines, and he has three months in which to do this. The Company furnishes entertainment at the mines—clean beds and plain, wholesome food. The visit can best be made during the summer months.

Any person subscribing for ten thousand shares or more of stock, or any person representing 10,000 or more shares, subscribed by himself and others, may come and examine the property and books of the Company any time within six months from date of subscription, and his expenses from home to the mines and back home again will be paid by the Company.

We urge you not to come in the winter months; come, if possible, between May and November, and spend one day looking through the works and the vast bodies of ore shown in the tunnels. After looking over the entire enterprise, the books, the management and all features of reinvestment, if you have bought much or little stock, in a club or alone, and think you can find any other investment that promises more profits, you can pull the string and get your money back.

Did you ever see a fairer or squarer proposition for investment?

Under these conditions, will you join us? If so, say so. Subscription blanks enclosed.



TIMBERLINE MINES COMPANY,
703 KITTREDGE BUILDING.
DENVER, COLO.

